

A Database Publication

# ATARI USER

Vol. 3 No. 5

September 1987

£1

## CHOPPER RESCUE

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in YOUR hands!*

*How to*

Convert Basic error numbers into words

Merge machine code into your programs

Escape the clutches of the Leather Girlbosses

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users

# EXPAND THE CAPABILITIES OF YOUR 8 BIT SYSTEM



US Doubler

Expanding the 1050 disk drive's strength is what ICD's US Doubler is all about. A true performer in the area of hardware modifications, this chip set quickly transforms your Atari into a power house, adding with innovative features never before possessed by a 1050. Features like true double density for greater storage, single and dual density support, an accelerated I/O rate designed to triple your speed when combined with SpartaDOS and full compatibility with existing Atari software.

US Doubler two chip set and wiring instructions

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Thru Dark Operating System has been widely acclaimed as the best DOS for the 8 bit Atari range. SpartaDOS from ICD supports everything from 810 disk drives through RAM disks to hard disks. A special menu allows rapid transfer, ensure and locking or unlocking of files using only the Space Bar, Option, Shift and Select keys. The utility package supplied also features a 32 character keyboard buffer, intelligent switching between disk drives, a binary file game menu, subdirectories and immediate file stamping.

SpartaDOS complete with 175 page manual

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SpartaDOS Construction Set



P-R Connection

Now you're no longer limited to Atari compatible printers and modems. The P-R Connection plugs directly into the serial disk drive port of any 8 bit Atari computer and provides the user with a standard Canonics printer interface and two RS-232C serial ports. It also draws its power from your computer which means one less cord fighting for a power point while its compact size leaves your work space virtually clutter free. The P-R Connection's serial ports use a fully compatible R handler and resemble those of the 680 interface with the same signals and functions.

P-R Connection and manual

£89.95

Supra's MicroPrint is a parallel printer interface for the Atari 8 bit series of computers which plugs into the computer's serial physical port and then directly into the printer. It works with most parallel printers and 8 bit software and includes a built-in printer cable.

MicroPrint

**MicroPrint**

£39.95



The SupraDrive AT 20MB hard disk for the Atari XL and XE series connects directly to the computer's parallel bus, allowing high speed data transfer rates of 5-10,000 bytes per second (approximately 10-12 times faster than the normal Atari drive).

The SupraDrive AT stores more than the equivalent of 200 single density Atari disks and can access any information within milliseconds. All this adds up to an extremely efficient system for the serious Atari 8 bit owner. The SupraDrive AT is supplied with hard disk interface, built-in power supply, manual and SpartaDOS.

SupraDrive AT ready to plug in and use

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Rambo XL transforms your 800XL into a mighty 256K computer and makes it memory compatible with the 1300XE. Now your XL can support Basic XE extended mode or the standard RAM disk supplied with Atari DOS 2.5. With the 10-200M handler supplied with SpartaDOS you get a 162K RAM disk - enough to duplicate a full double density disk in one pass! You must supply eight 256K DRAMs and the DOS of your choice.

Rambo XL with wiring instructions

£29.95



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## News

All the latest from the ever-changing world of 8-bit Atari.

## Top Twenty

Which is the top-selling Atari software?

## Error Messages

Expand your Basic error codes into meaningful words

## Telesoftware

How to get listings and other programs from MicroLink

## Gadgets

Keep unauthorized people off your Atari with this lock

## Reviews

Our evaluation team takes a look at the latest software

## Hints and Tips

Get more enjoyment out of your Atari with our readers' help

## IO Channels

Explore and change your Dos with this superb disc editor

## Spreadsheet

Check the weather using the Mrs Office II spreadsheet

## Rouloc

More amazing exploits with our resident adventurer

## Map

Get to grips with Leather Goddesses: Part 1 of the map

## Whist

A version of the classic game on your Atari computer

## Marger

Put machine code in Basic data statements with this utility

## Special FX

A program to produce scrolling messages on your screen

## Five Liners

More prize-winning Atari programs sent in by our readers

## Classified

Advertise all your unwanted hardware and software

## Game of the Month

Pilot your super helicopter on a dare-devil rescue mission

## Buffer

A detailed review of the time-saving MicroBuffer

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## Budget nasties

A BGR and arrow is the only weapon available to fight off the scary monsters on Forbidden Forest, just introduced for the Atari II bit on the Top Gun Budget label.

The player controls a small character who has to venture deep within a creepy dwelling forest cage.

The quest is to defeat the evil Demogorgon — visible only during flashes of light — but along the way there are giant spiders, bumble bee dragons, phantoms and skeleton soldiers. Price £1.25.

## Orc on the rampage

SPRITS and a cast of more than 30 characters are all part of the new adventure game *King's Orc* for the Atari II bit from Rainbow Software (01-240 6835).

In three parts it sets you loose as an oppressed Orc rampaging across a vast land trying to find a way out.

One phase of the inter-aim game is for the Orc to get its own back on the generations of adventurers who have persecuted it. Each of the 75 characters makes its own decisions and lives its own life.

Communication with the other characters learning spells and solving puzzles are all a part of the adventure. Price £19.95.

# More disc-based games are due

A BGR newsletter may be on the cards for Atari II bit users. With a new drive due to be launched this month, Atari has begun its depth research into potential home markets for disc-based software.

This year's launch of the BGR games machine, with the option to add a keyboard, encouraged the production of cartridge-based software as well as the more usual cassette.

But with the rebirth of Atari's own software publishing company label and the increasing list of titles the prospect of producing disc-based games seems more attractive, says the company's technical director, Les

Flayer. He said Atari had a lot of Atari II bit software going through its testing department at the moment.

This was mainly new-made games but there were a couple of conversions.

"Most are cassette-based but we are looking to see how soon we can begin to concentrate on disc-based programs", he said. "If there's a market, we're happy to lead the way".

He explained that in the US cassette were not used with the II bit machines. Over there, discs were the order of the day.

The new drive will be double-sided, 5 1/4in, but pro-

ing and availability details were still being worked out. Les Flayer said he had been impressed by the quality of games coming into Atari from smaller software houses and individuals.

"We are really happy to know these people. We will have a good look at their work and put it through the testing department. If it's good enough we'll put it out on our own label," he said.

"With the new BGR selling so well, and a pre-Christmas boom expected, we have got to put out as much good quality II bit software as we can."

And if it works out that people want this on disc, then so much the better.

## Deal brings new hardware line

SOLE distribution rights for a range of products from ICD of Illinois has been announced by Frontier Software (0433 67143).

The first product — US Doulier Chip — is a twin chip upgrade for the Atari 1050 disc drive which gives true double density for greater storage and an accelerated 90 nts. It is designed to triple the speed of disc operations. Price £29.95.

To complement the Doulier upgrade is *SparksDoc* which supports 819 disc drives, hard discs and hard discs.

A menu allows rapid transfer, status and locking and unloading of files using only the spacebar, Option, Shift and Select keys.

A utility package is also supplied and features a 32

character keyboard buffer, intelligent switching between disc densities, subdirectories and a translate file stamping. Price £29.95.

The third ICD product to be distributed by Frontier Software is IFS Connection which plugs into the serial disc drive port of any Atari II bit computer and provides a standard Centronics, printer interface and two RS 232 serial ports. Price £69.95.

## Sports simulation

DEATHLION, the new sports simulation from Firebird for the Atari II bit, allows up to four players to compete against each other in field events.

The game, from Firebird (01-332 8561), however allows only two players to compete against each other in the track events at any one time.

The 15 events are the 100, 400 and 1600 metre races, high jump, long jump, shot put, discus, javelin, pole vault and the 110 metre hurdles. Price £1.99.

FOLLOWERS of *Shogun* & Holmes will be pleased to hear that US state (014 and 0185) has released an Atari II bit version of *Shogun*'s 22% Super Street.

The player takes the part of either Shogun Holmes, a Chinese warrior, or a Japanese samurai or a European knight — all characters from Conan Doyle's Holmes stories.

Like all great detective stories the player has to get his or her wits against other players in order to solve a number of crimes. Price £2.95 in stores or £14.95 on disc.

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When you join MicroLink you've got the world of communications at your fingertips - 24 hours a day. You'll have immediate access to ALL the facilities offered by Telecom Gold ... and a great deal more besides.



## Two recommended packages

**If you have an 800 interface**  
 Plus HighSpeed manual modem  
 + cable £119.95 PLUS Mail  
 Centre £119.95  
 Total price £239.90

**If you don't have an interface**  
 MicroLink 845/850 4001 9000 modem  
 + Datamax interface + cable +  
 teletext software  
 Total price £148.00

With either combination you can also log on to other databases and bulletin boards all round the world.

All you need - apart from your Atari - is a modem, which plugs into your telephone wall socket, plus suitable communications software.

We have provided two possible options on the left.

Whichever equipment you use, you will be able to call MicroLink, open your mailbox, save to disc any messages waiting for you, and disconnect in as little as two minutes.



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THOSE with a sense of romance and a tender touch on the keyboard of an Aesop's Get ready welcomes Phylodendron (Hawaii) from Indonesia.

The romantic adventure is set on board the *Laford Dream*, a sailing ship bound for the West Indies, where the heroine is trying to reach her ailing father on the island of St. Vincent.

Pirates attack the ship and amid the destruction and plunder the voyage is pratched from danger by Nicholas Jackson, the captain.

captain, who not only saves her life but takes her home to work.

**Flendered Hearts** is an interactive fiction game that features drugs, crocodiles and exotic locations as well as plots. It is the first game from Infocom to be aimed specifically at women.

The story was written by Amy Briggs who read dozens of romance novels and researched 17th-century ships and costumes to make the story line as realistic as possible.

## Frightening freeways

**A FUTURISTIC** strategy role playing game for Atari 8 bit machines has been released by Origin Systems (MSRP \$39.95).

In *Aspidochelone* the players drive along the highways of the future where the right-of-way goes to the driver with the fastest car.

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

cities and public-interest highways there are plans to help the players bring Mr. Big to justice, but before that a series of other measures have to be undertaken.

The ability to decipher clues is required along with gambling skills, money, and a super car. Price £18.95 or more.

## Competition winners

Tied first place of a full range of MicroFront-tables, a framed third (Servus poster) and a T-shirt goes to Jason Peasegood from Illinois.

Second prize goes to Mrs. A. Kinrade of Worcester who will be receiving a collection of six Micro-press games, a framed poster and Victor M. Gullison. Others will receive the third prize of a framed poster, copy of *Salmon Run* and T-shirt.

[illegible]

A further 163 people will receive a letter from Service 7 about the simplified Pension, 13 October.

[illegible]

**THE GALLUP CHART** **TOP 20** ATARI SOFTWARE

TIME MONTHS	LAST MONTH	TITLE (Software House)	PRICE
1	▲	GAUNTLET LAS Gold	9.95
2	•	MILK RACE Atari/Introsave	2.99
3	▲	MICRO RHYTHM Firebird	1.99
4	•	HOOVER BOYVER Atari/Introsave	1.99
5	•	UNIVERSAL HERO Atari/Introsave	1.99
6	•	INVASION Bullfrog	1.99
7	▲	COLONY Bullfrog	1.99
8	▼	ASTROMEDIA Elite	1.99
9	▼	SILENT SERVICE Atari/Introsave/LAS Gold	9.95
10	•	POWERDOWN Atari/Introsave	1.99
11	▲	FORBIDDEN FOREST Top Ten	1.99
12	•	AZTEC CHALLENGE Top Ten	1.99
13	•	GRIDRUNNER Atari/Introsave	1.99
14	▼	DEEPER DUNGRONS LAS Gold	4.99
15	▼	FOUR GREAT GAMES Atari Value	3.99
16	▼	LEADERBOARD Atari/LAS Gold	9.95
17	▼	GUN LAW Atari/Introsave	1.99
18	▼	ATTACK OF THE MUTANT CAMELS Atari/Introsave	1.99
19	•	LA SWAT Atari/Introsave	2.99
20	•	AMAURITE Atari/Introsave	2.99

Compiled by Gallup/Microscope

Country holds the top position for yet another month, despite new new entries and one re-entry – L.A. Sweet at number 19. Budget films are well in evidence with Masterstroke leading four new titles in the Top 10.

**MicroLink**

in association with

**TELECOM GOLD**

# NEWSLETTER

## High tech facts on tap

MICROLINK is helping to speed the flow of information produced by a leading industrial and commercial monitoring organisation.

The Brussels based European Registry of Commerce keeps tabs on all the Continent's high tech industries producing monthly reports on everything from private aircraft fleet statistics turning to industrial loans.

It also logs all computer-related new products and patents, gives reports on important exhibitions, seminars and conventions, and undertakes market research projects for clients.

"Most of our 300 subscribers are UK based and they will soon be able to receive our intelligent services more quickly and economically thanks to MicroLink's electronic mail," said Registry managing director Ivoerd Andriessen.

Eventually we intend to establish an online data base so that as soon as our reports are prepared they can be accessed by our clients.

## Star news flashed online

WHEN discovery of the first supernova for three centuries was confirmed earlier this year, US citizenry enthusiasts received the exciting news via MicroLink.

The main international astronomical clearing house at the Smithsonian Institute in America flashed the news by telex to the MicroLink mailbox of The Astronomer magazine. Information can be and is accessible to the vast & burgeoning amateur community.

Complete details of the

event exploded star were then relayed to the organisation's 500 plus members at home and abroad.

Apart from the supernova's importance, it was a routine operation. For The Astronomer has forged an impressive partnership with MicroLink to spread the news of latest developments in astronomy and related careers opportunities for their observation.

Quick dissemination is vital if our people are to have a chance to see the

skies before they move away," said Guy Huxford, editor of The Astronomer.

MicroLink ensures that you can now receive news from the Smithsonian Institute 24 hours a day - a facility enhanced by radiopaging which alerts us to messages arriving in our mailbox.

Too often, people can often observe a phenomenon the same night it is discovered - which was something that was impossible in the old days before MicroLink.

## Help for the helpers

COMMUNICATORS in Montreal, Atlantic Canada, is helping the world to show care of Britain's ageing international and overseas New MicroLink could help in the final stages.

What he is on a 10-day tour of the Far East and Pacific area he'll use MicroLink to demonstrate the feasibility of electronic mail communications over long distances.

Alfred is Far East programme manager for Vol-

untary Service Overseas - founded 25 years ago to supply skilled volunteers to those and help the underdeveloped countries. The organisation currently has 1,200 staff working in 41 countries of Africa, Asia, the Caribbean and the Pacific.

"As a personal response I'd be testing MicroLink's ability to improve communications between a 500 in London and its field representatives overseas," he said.

## Teaching comms

COMPUTERS play a big part in degree courses at the Graduate School of Management in London where MicroLink is the chosen medium for teaching communications.

The institution has 400 students from all over the world taking courses leading to degrees in law, economics and business administration. There are also diploma courses in a variety of subjects related to the world of business and commerce.

What they all have in common is information technology and its efficient use as a medium of communications. The school has a fully equipped computer science and information technology laboratory.

We also MicroLink to provide for our students how electronic mail can be an advantage in business and the James Gibbs Dean of the school.

## Faster delivery for postmen

MICROLINK is helping the people who deliver the mail to discover the benefits of electronic communications.

The Post Office Uniforms Council has issued a note to that it can improve communications with its four components - their

constituent of the Union of Communications Workers, the National Federation of Sub Postmasters, the National Communications Union and the Carriers' Union and its Managers' Association.

Secretary of POU, Steve Cassidy said: "Our

job is to be a central point involving two or three of our members of our members as a whole. There as the we have had to rely mainly on the post and telephone to communicate with their offices. If we wanted to send a letter we had to use an outside agency.

**YOUR chance to join MicroLink - turn to Page 6**

# Do you get the message?

**LEN GOLDING makes sense out of Basic's obscure coded advice**



IT'S a sad fact of life that most Basic programs don't run correctly the first time — even if you've copied them from our listings. Often this is due to relatively minor typing errors such as using the letters O and I instead of zero and one, typing two commas together in a DATA line or misspelling a variable name.

It's also easy to miss out a vital statement, or even a complete line. Faults of this kind are relatively easy to trace once you know what you're looking for, but Basic's error messages don't help much — "ERROR 13 AT LINE 200" is not particularly illuminating, especially if you don't have a code book handy.

The program makes the job of debugging a lot easier by printing precise, understandable error messages alongside Basic's own cryptic clues.

The program substitutes as the cassette and disc versions are not identical, since they use two different systems. Program 1 makes an outboard cassette, while program 2 creates an AUTORUN SRS disc file — we explained the difference in the April, May and June issues of *Asian User*.

The cassette version also leaves out all messages relating exclusively to disc drives and RS232C interfaces, so it takes up less memory and loads in about 10 seconds.

The routine works by checking address 183 every 10th of a second to see if Basic has stored an error number there. If so, it sorts through the error messages in sequence until it finds the one which corresponds to that number. Since these messages

vary in length, it must be able to tell where one ends and the next begins, and we provide this information by typing the last character of each message in brackets.

If you fail to do this you will get some weird results.

Whichever version you choose, take great care in typing the numeric Data statements, since they contain machine code programs which will crash if you make even the slightest typing error. And be sure to save a copy before you try running it.

Also remember that we're dealing with a two-stage process — the Basic program is not itself the error generator. It just makes a master file containing the error generator routine. It's this master file which must be loaded into memory before the routine will work.

To make the cassette version, run Program 1 and when the two beeps sound, follow the usual C&W procedure. To load the resulting master file, switch power off, reword the tape, switch on again while holding down the Start key, then press any key to load the program.

When READY appears, the new error routine is ready for action. The disc version is even easier. Just run Program 2 to make an AUTORUN SRS master file which will install itself automatically on power-up.

With the master file safely loaded, you can test the system by generating a few deliberate errors. Try

**10 PRINT PEEK-10  
or 10 POK=100/PEEK(244)-10  
GRAPHICS 0**

When you run them, the first should

give you "ERROR 3 AT LINE 10", followed by "Illegal numeric value". The second should give "ERROR 147 AT LINE 10", followed by "Too little RAM for GRAPHICS mode". Disc users should also try

**"TO LOAD "D:\MOSLON"**

This should give "ERROR 178 and 'file not found'". If you get the wrong message, the chances are that you've forgotten to add one or more mass ages with an inverse character, or have left out an inverse statement.

If the computer locks up completely, or won't accept any lines of Basic, check your original typing of the program and especially the machine code data statements and all lines which contain variables M, M1, and M9.

If you have to correct any mistakes, save the corrected Basic program and then run it to make a new master file.

When using or modifying the error message generator, there are a few important points to bear in mind. First, it uses stage one of the vertical blank interval. If your Basic program allows the addresses which control immediate VIDs — notably 545 and 547 — the error routine will stop working. Fortunately most programmers prefer to use the deferred stage two VBI which won't affect the error messages.

Second, the cassette version is set as low as possible in RAM (1752 onwards), to leave maximum space for your Basic programs. This means that you cannot use it in conjunction with any peripheral which addresses that same memory area.

The only caution one truly to

Turn to Page 16 for





All more and more of you are becoming interested in the numerous online services and the advantages of electronic mail as there have been growing lots of letters asking about downloading our listings from the MicroLink mainframe computer.

MicroLink is a vast electronic storage and mail system which is also linked into many other computers giving you access to a whole range of online services. One of the facilities offered is the ability to obtain computer software from the system — otherwise known as downloading telesoftware. Among the programs you can download are listings from *Asat User*.

But how do you go about it? Well, assuming you are online to MicroLink, you can access the download service by typing **T** to the main **>** prompt. The main telesoftware menu allows you to choose programs for your particular computer, or to go straight to the latest software.

You can download your programs in one of three modes. The first two are variations of standard *Asat* text which are very straightforward to use but can occasionally be corrupted if you get a bad phone connection. The other mode — *Kermit* — is a special error-correcting protocol but is rather slower in transmitting files.

However, unless your communications software supports *Kermit* — and most *Asat* programs don't — you will not be able to take advantage of this development. If you do have access to a *Kermit* supporting communications package you can get more information by typing **HELP KERMIT** at the **>** prompt.

All of MicroLink's telesoftware can be downloaded in the form of *Asat* text files and, in order to do this, all you need is a communications program known as a terminal emulator which has the ability to capture the incoming text and send it to the *Asat* type for later viewing. You might find this is referred to as *spoofing* to fit in with your manual. The *Amoscom* system provided on some communications doesn't at present work with MicroLink.

There are many software packages you can use, including the new *Mini Office II* communications which is designed specifically to make it easier to talk to MicroLink and similar systems.

Be aware of using software which can only store incoming text in a memory buffer. Many of the downloaded files are quite long and would quickly fill up the available room unless there is a facility

# Painless programs . . .

**ANDRÉ WILLEY** shows how to download them from MicroLink

to dump (or speed) to disk as the buffer fills up.

MicroLink is a text system and, as such, cannot handle any of the *Asat* graphics characters or machine code files. To get around this a special system known as *Expanded Asat* has been developed.

The procedure for downloading both types of file is very similar. We'll look at the procedure with *Mini Office II*, but similar procedures apply to all software and your manual will show you the relevant commands for your own.

The latest software is stored in a way that makes it much easier to find the programs you want: instead of all the software will be stored this way. So let's look at how to download software from this section.

After typing **T** to enter the appropriate menu number at the first telesoftware menu (currently on number 2) You will then see:

```
<C>search <A>asat <E>ermit
<D>help <O>quit
```

Enter **S** followed by the type of file you're looking for. So, for example **S ATU** would find any *Asat* user programs, **S ATAD** all *Asat* *Asat* bit programs. After entering your choice you will now see a list of programs available with any relevant information.

Choose the file you want, then to download it enter **A** followed by the file number given. For example, **ATAD** would download file **ATAD** both *Asat* and *Expanded Asat* files are downloaded with the **A** option.

You are then presented with some details of the program and given a chance to save them if you wish. *Asat* files helpfully you are told to prepare to save the program and it's at this point that you turn on your capture-to-disk facility.

On *Mini Office II* this means typing **Control-Break** for *Resave File*, entering a filename and then selecting

the mode. This should be **2** for a standard *Asat* file and **3** for an *Expanded Asat* one. Files with a type shown as **A** are *Asat* and **E** are *Expanded Asat*.

You are now ready to begin the download, so hit the **Start** button to begin the capture and press **Y** to return to the MicroLink keyboard screen. The text will now be displayed on your screen, with occasional pauses as your *Asat* sends a block to the disk file.

When the incoming text stops completely, press the **Start** key to close the capture file and hit **Return** to tell MicroLink to go back to the menu.

If your communications software doesn't support *Expanded Asat* you can download it as a standard *Asat* and then convert it into a binary file. There is a short *Asat* program called *Expanded Asat* on MicroLink to enable you to do this quickly and easily. See the *Help* information on that program for more details.

When you have logged off MicroLink you should re-boot your computer and go to *Reboot*. As *Asat* files may be loaded by camp

ENTER 5,7 ON CARD

*Expanded Asat* files are usually saved *Asat* programs and are loaded normally with—

ENTER 5,7 ON CARD

Some files are machine code binary files and these should be loaded by going to the *Load* menu and typing **L** for *Binary Load* and then entering the filename. More information about the type of file can be obtained from the *Help* file associated with each program.

This should have given you an insight on MicroLink's telesoftware facility so there's no need to spend hours and hours trying to do it online if you want.

ARE you tired of people using your computer without permission? Here's a gadget that could be useful at home, school, in computer groups, youth clubs or charity organisations.

It locks your computer by blocking the power supply until you enter a secret five-digit code.

There's no key to be lost, stolen or copied. The choice of code number is entirely up to you and can be changed easily if the need arises.

The gadget fits neatly into your power supply lead.

It doesn't require software and several fail-safe features are built in. It can control any item if an computer disc drive or program recorder—in fact anything that uses either a 5V DC or 6V to 8V AC power supply, at up to 2 amps.

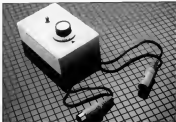
Figure 1 shows the circuit. It's quite complicated, and you don't need to understand how it works in order to build and use it, but for electronics buffs here's the operating theory.

The lock must be able to detect when a digit is being entered, and to discriminate between correct and incorrect entries. These three states are indicated by different voltages on the signal line. No digit = 2.5V; correct digit = 5V and an incorrect digit = 0V for three outputs. IC3a and IC3b are wired as comparators, to monitor the signal line voltage.

If 4 is held at 2.5V nothing much happens. If it rises above 3.5V, IC3a sends a clock pulse to IC1. If it falls below 1V, IC3b sends a reset pulse to IC1.

IC1 is a decade counter with 10 outputs, though we use only five in this application. They are normally held low (0V), but go high (5V) in sequence from 0 to 9 when clock pulses are received at pin 14.

If the count reaches five, pin 12 goes from high to low, and we use this as the success signal. Any incorrect digit



## Code lock

**A device to keep unauthorised hands away by LEN GOLDING**

along the way will generate a reset pulse via IC2a which sets the counter back to zero, wiping out the memory of anything previously entered.

The trick is to ensure that only the correct sequence of five digits can generate the clock pulses in succession. To see how this is done, let's trace the operation of Figure 1, where the correct combination is 24879.

When you first switch on, IC2 sends a brief positive pulse to pin 18 of IC2 and, via D1 and R1, to pin 12 of IC1.

This does two things. First it latches the output of IC2a high, so TR1 turns on and RL1 pulls into its closed position. No current can flow to the computer when the relay is in this state.

Second, it ensures that IC1 is set to zero, so pin 3 will be the only high output.

Now the output is connected to the S1 pin which corresponds to two on the dial. So if you rotate the dial to two and press S2, the 5V at output 2 will appear on the signal line, generating the first clock pulse.

Output 0 now goes low, and output 1 goes high, so the second clock pulses will be generated only if you enter the digit which is related to output 1—in this case four. This sends output 2 high, ready for the third digit (five), and so on, until the entire combination has been correctly entered.

When the count reaches five, IC1 pin 12 goes low. This drives the output of IC2c low, and R2 ensures it stays that way. TR1 turns off, so RL1 clicks into its open position. Current can now flow through the relay contacts, and the computer switches on.

Connecting the outputs of IC1 to different pins on S1 will programme the lock for almost different combinations. Almost any five-digit code can be used

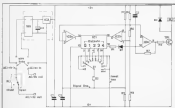


Figure 1 The Code lock circuit diagram

Turn to Page 14 ▶

#### 4 From Page 12

— the only restriction is that no dead end appears more than once.

There are a few components we haven't mentioned so far. C1 reduces electrical noise on the supply lines which might otherwise cause IC1 to count incorrectly. R2 and R6 produce reference voltages for IC2a and IC2b. C2 helps to debounce S1, and C3

protects TR1 from voltage spikes generated by the relay.

C4, BR1 and IC3 are needed only if you want to control 400/600 computers, disk drives, AFD program recorders or other kinds of equipment which use a 50- or 60-Hz AC supply. The PSU for A1, and X2 models deliver 5V DC, so it can power the code lock directly.

Figure 8 shows the PCB pattern for

those of you who like to etch your own, but a ready etched and drilled PCB is available from RH Design. We always make for the terminal block and BR1 should be trim diameter. Flange holes are .060-in. and all other pads should be drilled 8/64-in.

Now let's look at construction. Figure 9 shows the component layout for the version which operates with AC power supplies. If you're using an XL602 power pack, omit BR1, C4 and IC3 and fit the two short wires from Acc B and C to E, instead of from A to C and D to F.

Several of the components are polarized, so they must be soldered the correct way round. BR1 has + marked. C4 has an indentation at the positive end, and the diodes have a coloured band to mark their cathodes.

Take particular care that IC1 and IC2 are inserted with pin 1 in the correct position, and that IC3 (if you're using it) goes with its flat metal side towards C4.

S1 and S2 are mounted on the case, and connected to the board via the terminal block. Fig 10 shows how they are wired for the combination 34579. S1 is a 12-way switch, but the second-mounted control break has only 11 positions marked (S1 to 10). However, if you remove the flange nut and check-proof washer you will see a small ring with a tooth which limits the spindle's rotation.

Push this out and move it round until the tooth points at 10, then release it. Now the switch will rotate to only 11 positions, matching the control break markings.

The contacts on S1 are numbered, so it's easy to see where you are. One corresponds to zero on the control break, so, when you've chosen your combination, add 1 to each digit and solder a wire to the pin with that number. (That's why in Figure 10, the combination 34579 appears to be wired for 3,5,8,8,10.) The common pin is taken to C2 to the signal input, while all ground pins are connected together and taken to the 0 position.

When everything is assembled, fit the unit into its case, then attach the power supply input and output leads. The simplest, cheapest and safest way is to break into your existing lead

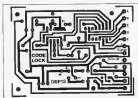


Figure 8  
The PCB  
pattern for  
Code Lock

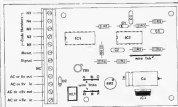


Figure 9  
Component layout

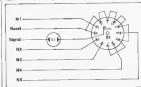


Figure 10  
S1 shown  
wired for  
34579



Figure 11  
View into plug  
fitted to XL602 PSU

You could fit an extra plug and socket but in this case remember that unless your power supply plug is well taped into the socket the gadget is pointless.

In AC mode it doesn't matter which way round the live power leads are connected, so long as you get the

input and output right.

Note that if you're using an XL or XE power pack, the positive and negative leads for both input and output must be connected the right way round, or you will almost certainly damage the case lock, your computer, or both.

Positive is the striped lead, negative

is all black, and Figure 9 shows the pin connections.

For security reasons you might like to run a line of white insulating tape around the crack between the case and its lid. It won't keep determined people out, but at least you will know if anyone has been tampering.

## PARTS REQUIRED

		Maplin Code		Maplin Code
R1	30k orange/orange/orange	M038	16 pin DIL socket	M119V
R2/R3	47k yellow/bk/lt orange	M47K	12 way PCB terminal block	PC14R (optional)
R7	100k brown/black/yellow	M100K	Plastic box PCB header	LF216
R8	2.2k red/red/bk	M022	Control knob type R2	R211B
C1/C3	0.1µF 50V disc ceramic	YC05C	Pack 884 - 10 spacers	Pincol
C4	330µF 25V axial	PC87Y *	Pack 884 - 10 1/2" dia bolts	BF12K
C5	40170C decade counter	Q530K	Pack 884 nuts	BF14U
C6	LM324 quad op-amp	LF245		
C7	uA7805 - 5V regulator	Q531J *		
C8/9	8000 bridge rectifier	Q171N		
D1/D2	1N414 signal diode	Q532K		
T8	BC108C transistor	PF13G		
S1	1 pole 12 way rotary switch	PM20P		
S2	Push to make switch	PM20N		
SL1	Male 16 pin DIL plug	SL14U		

\* Not needed for 386/387 computers - see text

All components available from Maplin Electronics Supplies, PO Box 3, Rayleigh, Essex, SS6 2PP

Printed circuit board (order code 28P73) price £7.98 inc VAT and postage. Available from BH Design, 137 Shearwater Avenue, Harrogate, North Yorks. Tel 0423 880229

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# Floyd is back!

**Program Developer:**  
Price £24.95  
**Supplier:** Informacore Ltd  
Jaffar Road, 23 Pond Street,  
Hempstead, London EN6 3PL  
094  
Tel: 01-437 7327

LET'S play a game of *Heidi and Becker*! Now who would say that? Who could almost drive you to drink one drink and in the next stimulate an overwhelming sense of affection?

Who would carry out an act of heroic proportions and lay down his life for you? And who, if you were so inclined to give him an unrequited look, would mutter "Who did you do that? I think you're a shaken loose", and go off into a corner and sulk?

It could be no one but Floyd, the scatterbrained robot hero, Informacore's Planetfall. No one who has met Floyd is ever likely to forget him. And if you haven't had the pleasure, here's your chance.

For the good news is — Floyd's back! That lovable, maddening mess of an old-time robot with a bang in Steve Morosky's brilliant sequel *Stationfall*.

The author of *Planetfall*, in which Floyd made his illustrious debut, won an award for Best Computer Software Designer. Make no mistake: we are talking real quality here.

You don't need to have played *Planetfall* to enjoy *Stationfall*. That's why play one superb game when you can play two! As a result of your failure as *Planetfall*, you have been promoted.

Before you were just a scurrying bit of debris and debris of glitch signs. In *Stationfall* you are now well, although you're a much bigger tank, the job is just as mind-numbingly boring.

Your tedious scrubwork has been replaced with test case paperwork. Forms, forms and more forms. Take

today's — 100-line estimate sheet, for example.

You have to pop over to Gamma Delta Gamma 277.0 Space Station and pick up a supply of Regulation Black Form Sanders Request Forms No. 10.

Above your ship the GPS Duffy is your former arch-foe, mentor Blucher (who has since been promoted to desk scrubbing duty) and a trio of robots in the robot pool. There's Rex and Helen and — yikes! — your old playmate Floyd. You can only take one from the pool and, of course, it's got to be Floyd.

Try picking one of the others and just see what happens. Even if it were technically right to pick Rex or Helen, would you bear to see Floyd's liver as he begins to quiver as though he were about to cry? I couldn't.

With the end of the documentation included in the package, it doesn't take too much effort to plot your course and find the way to the massive Space Station complex. The 10 blueprints that are also included with the game certainly come in handy with the mapping once you've arrived.

Rex and Floyd are not alone on the station for long. In walks another robot, a bit of a backwash apparently since he's reading a volume of poetry.

Turn out this is Pluto who is rather like an older, wiser version of Floyd — fortunately he's just as friendly.

Floyd and Pluto are very much in the mould of all good comedy double-acts — *Ross and Gifford* spring to mind. It is one of the great pleasures of this game to watch them at work and play (which they do incessantly, moodily without taking any notice of you).

There are other inhabitants, too — an alien and an Arabian Nights creature (shades of *Garg*!). Your mission is certainly turning out to be a far cry from the pristine paper hunt you thought it would be, even if



it does at the moment seem to be lacking in mystery and excitement.

But it soon becomes apparent that all is not well. The Commander's detailed log makes clearer reading as it shows a gradual decline of the normally smooth running of machinery and procedures. The problems all seemed to begin with the arrival of that strange alien craft.

You discover at first hand that things are indeed going very wrong. Automatic sliding doors begin to open much more slowly as you approach, but also shut with an alarming suddenness as you pass, endangering your life.

Having android menials do start making you for something that needs a quick bit of spell-writing. And even Floyd gets more things than normal.

*Stationfall* has much going for it. As well as the expected deep level of detail, future-proof, wide vocabulary, superb parser, and the usual high standard of Informacore packaging (a *Heidi* control patch and three pieces of bureaucratic bumph are included in addition to the items mentioned above), the adventure itself is a wonder.

There are *Planetfall* to read (remember *Heidi* *Heidi*?) and even an old

hands the *Grues* put in an appearance. But above all, *Stationfall* has the single ingredient which, with one exception, no other Informacore adventure has — Floyd!

Try to save your game position and Floyd's sure will light up as he exclaims, "Oh boy, are you gonna try something dangerous now?"

Attempts a *Reunion* and Floyd looks disappointed but understanding — "That part of the story was more fun", he sighs. He has equally shabby comments about coding, restoring, and many other topics.

Just when you think Informacore has reached the high peak in quality and humour, leaving the rest of the competition in the dust, it uses the stakes *Stationfall* is going to take some beating.

Let the last word be Floyd's. When you next go into your local computer store and spy *Stationfall*, heed these words, when you first slugged eyes on him in the robot pool. Oh boy, oh boy, oh boy, just Floyd, just Floyd!

Rob Chappell

Presentation	—	10
Appearance	—	10
Performance	—	10
Value for Money	—	10
Overall	—	10

## Golden oldie

**Program:** *Gridrunner*  
**Price:** £1.99  
**Supplier:** Microtronic #16  
**Paul Smart**, London EC2M  
 6JH  
**Tel:** 01 377 4888

HERE'S another of Jeff Hunter's golden oldies. Unlike Hunter's *Boxer*, this one belongs to the blast-em-out-of-the-skytime-before-they-blast-you-kind, that is the hallmark of a Minar game.

The screen is filled with a fine mesh grid along the bottom seven lines of which you craft the Gridrunner of the title; my mouse freely

The main idea is to fire up the grid, destroying anything that moves and anything that doesn't until you've cleared the area. Fortunately, your plasma cannon has a repeat fire

facility — and you'll need it.

Public enemy number one, and traversing the grid from the top at a rate of 1600, are the Gridsearch Squads. These are segmented caterpillar-like birds which are reaching one side of the grid, deep down a line and zoom back along it.

They come in assorted lengths and if the leading segment is hit the squad is reduced by one, but keeps on trawling. If any segment other than the front one is blasted, it splits into two independent squads at the point of impact.

In each case, any destroyed segment immediately turns into a pod. These lodge in the nodes of the grid and gradually change shape. When the metamorphosis completes they drop a bolt of energy down the grid which are



fed to your work — a single hit will slow a pod's growth while repeated hits will de-stroy it.

Pods can be generated another way. Running along the X and Y axis of the grid are the Zappers. These cheerful little alien perr-dictably stop and hurl a plasma beam along the grid. When the two beams meet, a new pod is formed. While the Y Zapper's beam is harmful to Gridrunner's health, the X beam is lethal — both should be avoided.

When you've cleared the first grid there are another 20 to follow, each easier and more fun than the last.

Gridrunner is a classic, a top-notch, easy, multi-screened shoot-'em-up. They don't come any more frenetic than this — go get it and get gridrunning.

**Bob Chappell**

Sound	—	4
Graphics	—	5
Playability	—	5
Value for money	—	10
Overall	—	6

## Crowd puller

**Program:** *Alan Chappell's Football Fortunes*  
**Price:** £14.95 (essential)  
 £17.95 (delux)  
**Supplier:** COS Software  
 COS House, Bedford Park,  
 Gloucester GL1 4ES  
**Tel:** 0202 21134

ONE of the best things about *Football Fortunes* is that you don't have to like or understand football to enjoy it. It helps of course, but if you enjoy *Micropolis*, then you should get a kick out of this one.

It is in no way an arcade type of simulation, but a computer intensive board game on the theme of soccer management, aimed for success on the field and in the bank.

The pack includes the program disc, a well designed set of other files, board, player cards, bank notes, counters and clearly laid out instructions.

Each player types in his name and chooses a team to manage. There is a choice of 10 first division sides, but any other team can be constructed, even an amateur or school team.

The computer then allocates 11 player cards and two substitutes to each team, each having a nominal value of between one and five points.

Players "throw" the computer dice and move accordingly. There are possibilities for player transfers, interest, loan, attack and defensive strategy, selection problems, sponsorship, managers' lot, luck — good and bad — loans, transfers, injuries, wage demands and so on.

The team strengths are reassessed and entered into the computer, which determines the match results. These then come through on the teleprinter, the gate money is allocated and the

league table formulated.

Matches are generally decided by the team strength, but there can be upsets. As managers often say on the box: "There's nothing certain in football".

Points are allocated according to your team's position in the league, its progress through the cup competitions and money held. The winner, naturally, is the player with the most gate points at the end of an agreed number of seasons.



COS has come up with a great game and presented it really well, purely as a board game, and it would lose something for being a micro-only game.

The balance achieved is just right, making for a great family game — and no crowd trouble.

**Mark Reynolds**

Graphics	—	8
Playability	—	7
Value for money	—	7
Overall	—	8

## Mixed bag

**Program:** Four Star Compiler Volume 1  
**Price:** £7.95 (suggested retail)  
**Distributor:** Red Hat, 12 Farnell Street, Manchester M1 3DU  
**Tel:** 061-435 1000

FOLLOWING these assessments, with Crompton's Chris, Space Leblanc and Andre-Denis, Red Hat has decided to jump on to the compilation bandwagon with a collection of four earlier games: *Escape from Doomworld*, *Fatic Express*, *Demon of the Undead* and *Laser Hawk*.

*Escape from Doomworld* involves you in a mission to save a team of astronauts from a planet about to explode Earth.

Game-play is divided into a platform game, a flying shooter and a landing run. The platform section has you leaping over Galki las robots and electric pulses in order to collect

containers of air, a rocket and a small black marked CD.

Once you have mastered this section you are taken into a game which resembles one of *Choplifter*. Avoiding enemy fighters and collecting fuel along the way, you must rescue the 10 scientists returning them to your starting position.

Though not spectacular the graphics and sound are adequate. Although the controls take getting used to I found *Escape from Doomworld* had an addictive quality and well worth playing.

*Fatic Express* is well named – the train is out of control and you must get to the engine to stop it. Leaping over carriages and avoiding balloons, lightning bolts, laser grids and short-tempered people you reach your goal.

A note of warning – take care over the last three screens, it took me nearly three hours to get through them to the engine. 'Mind

don't you stopped the train" is the final message – and an anti-climax. Once completed it is not a game I would return to.

*Laser Hawk* is completely different and so enjoyable now as when I first played it. Great graphics and appropriate sound.

The evil forces of Prox have attacked and you are chosen to launch the counter attack using the most advanced helicopter available – *Laser Hawk*.

The plot is simple – destroy everything. Plants are awarded for blowing buildings and enemy fighters while avoiding missiles and lava eruptions.

This is a shoot-em-up game and simple. It's the best game of the collection and it was converted to a shoot-em-up fan.

*Demon of the Undead* is disappointing, interesting to be a clone of the arcade *Ghosts 'n' Goblins*. It fails miserably.



With appealing graphics, sparse sound and difficult gameplay you make your way through a haunted graveyard. With four enemies and a gun for protection against evil apes, ghosts, skeletons and bats, you test the wits.

Despite *Demon of the Undead*, this compilation is very good – a good buy if only for *Laser Hawk*. I am waiting for volume two.

Robert Swan

Sound	4
Graphics	5
Playability	7
Value for money	6
Overall	6

## Fast and furious

**Program:** Astronoids  
**Price:** £1.99  
**Distributor:** Robin Software, Box Manning, 1 Orange Street, Sheffield S1 6DP  
**Tel:** 01424 255780

IT may be another space shooter-on, but this one makes up in slick graphics and smooth, fast action what it lacks in originality.

These early aliens are at a gap – if you are about to destroy Starbase Astronoids. Many of your fellow astronauts have been lost and it is your task to pick them all up.

While you're about it, you must avoid deadly resistance and annihilate the menacing alien hordes on your way to smother their mother ship. And all this before breakfast and with

one hand tied behind your back, I suppose?

The game shows an overhead view of a 10 screen wide playing area, set against black and stars heaven. You pilot your two-wheeled craft from left to right while the score scrolls smoothly and smoothly to the east.

In front of the backdrop is a huge and impressive grey, metallic-looking ship, presumably the mother ship. I can't say for sure because I never completed the 10 screens.

When you see the number and speed of the aliens and meteors coming at you from the right, perhaps yes, too, well have a few problems making it through to the planet. Don't forget that you're supposed to pick up your competitors as they

free-fall past your portfolio.

There are 10 types of aliens but you do have the capability of dropping one of your rope-aid bombs when the going gets rough. Trouble is they don't come cheap – you have to accrue 10,000 points to get another. You'll also get an extra life with every 10,000 points as well.

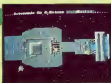
The game is for play with joystick only. Sound effects are pretty good and com-

plement the slick graphics making a nicely polished product.

One of the better space arcade games around and at a budget price, too. *Astronoids* is well worth a whirl.

Bob Chappell

Sound	4
Graphics	4
Playability	4
Value for money	4
Overall	4



## Penalty box

**Program:** *Footballer of the Year*  
**Price:** £9.95  
**Supplier:** Granada Graphics  
 Alpha House, 10, Carver  
 Street, Dunstable, MK1 4PS  
 Tel: 0452 752242

ALREADY released on other formats, *Footballer of the Year* now makes its debut on the Atari.

As a young 17-year-old apprentice footballer, you start your career. With a set amount of money and a choice of division and club, you make your debut.

You have a set number of goal yards. By using one of them in a game, you are given the chance to score goals and increase your season's tally. Sometimes your card will present you

with a penalty with the chance to score without any hassle, otherwise you get two defenders rushing at you.

Usually you are given three or four chances a match to score and the final score appears (teletype fashion). After the game, you are able to assess the league table including your position for the season (goals for the national team, in the FA Cup, League Cup and in the League).

You can change your financial picture by using an Inverted Card. You may win on the roulette table or break a leg (for instance Transfer Cards can also be bought, the price depending on which division you are playing in). If the talent scout is not interested you have



wasted your money.

Almost everything is text and the poor graphics are all monochrome on an unchanging background. I was disappointed too, by the lack of sound — the occasional cheer would have been nice.

The transfer procedure is ridiculous. With a rating of Excellent, in the First Division, and with over 100 goals scored after two seasons I was turned down by a Third Division scout.

Looking for an average player?

*Footballer of the Year* is quite addictive, but a little too easy to score goals and to get a high rank. At £9.95 I found it overpriced.

Robert Buzan

Sound	.....	Nil
Graphics	.....	D
Playability	.....	F
Value for Money	.....	D
Overall	.....	F

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# your HINTS & TIPS

## One Man and his Droid

In the February 1987 issue of *April* User Colin Palmer gives you the first eight level passwords for One Man and his Droid. Well, here are all 22 of them:

Man Applicable	Seconds
Bulbule	Glenda
Arach	King Kong
Probers	Indigam
Genster	Curry Rice
Tapped	Coffee
Mapasento	Cassette
Time Warp	Telephone
Tututoplam	Computer
Gargoyak	Edwardsite

— Ricky Akford, Steventonidge, Writ  
Writlands

## Starquake

When you enter the transports in Starquake use the following codes to move to various areas of the game:

Olson	Brual
Renna	Arach
Witwale	Penta
Misum	Ardie
Crash	Bake

— Stephen Beale, Uptonwater,  
Essex

## Spellbound

HERE are some tips for Spellbound! To light the candle, take it and cast Condemnatum Thaumaturgus. The candle can then be used to read the Ancient Scrolls.

On the ground floor, stand on the yellow paddle and cast Amaris Photomagus to make your armour glow. This means that you can drop the glowing bottle and release the Banisher. Command it to help for hints. Use the broken glass to read the writing on the scroll.

Give the jarule to Garmen and summon him to the pit. Command him to help and he will place a useful platform in the pit for you to use.

To reach the broken Tellman,

give it and the tube of glass to Mark and command him to help. To release Garmen is complicated, but here goes:

Take the three coloured crystals (red, green and blue) and the white gold ring. Give the Ring of Shadown to Oak the Clerk and summon him to the Most Magic Room where Garmen is trapped.

Holding the ring, the three crystals and the mangled Tellman, go to the Most Magic Room and cast the Crystallium Spectralis spell and throw the crystals at Garmen in any order to release him.

Cast the Release spell and he'll be ready to read the parchment here. — Mark Powell, Lower, East Sussex

## WarHawk

WHEN you get to the fourth screen a flashing spacecraft will appear. If you fire at it once you will find that it changes shape. You can now dash with it. When you do this press the cross and you will now have copied this. — Richard Miles, Harrow, Herts

## Racing Destruction Set

WHEN you design a track the best area to lay a kerbside or pit is on a slope or on the ice patches. The best car to choose when playing the game is the fastest, lightest (jump you can get) but not too light — get some weapons and shields!

If you are slowing on paved surfaces with no kerbside go for the racing car. If there are a lot of slopes use the street bike. It is possible with a little luck to do a three point turn and get back the very way came. — Pierre Marshall, Harborough, South Humbershire

## Zorro

WHEN you come to the bell tower grip from the end of the coil and jump from the end of the coil and keep Zorro jumping. He will then jump the gap between the door and the wall. Don't forget to collect, and the wall is the side. — Stephen Shi, Newbury, Cleveland

## Gauntlet

ARE you having trouble with the polarized foot in Gauntlet? The answer is easy. Take a look at the foot before you collect it and if the handle is square then the foot is safe. If it is triangular the handle contains polarized foot. — Steven Bick, Central Region, Scotland

## Spy Vs Spy II

IT is possible to lay traps around the base of trees and also put up a time mine. This allows you to trap your opponent, and when he is hit drive he will land on a trap. The best one for this is land on is a bomb. — Sue Rowling, Newbury, Cheshire



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# Dos discs at your fingertips

FOR the last two months we have been examining the workings of Dos 2.0 and Dos 2.05, and perhaps some of you will have become a little daunted by the complexity of the bit-mapped data storage system used in order to save space on the disc.

This system of using bit-maps allows each byte to represent separate items of information in a highly compact, but calculating the results can prove long and tedious. If you have tried Bruce Woodford's disc editor editor from the last issue you will have noticed just how unrepresentatively some of the data looks.

For those who would like to have a go at modifying the disc format but who don't feel up to working out all the numbers then DISCVIEW is for you. Type it in exactly as shown, and save a copy to disc. You can use the Dos 2.05 editor to save a program to be sure you haven't made any mistakes. Watch especially for the DATA statements starting at line 21200.

When you run the program it will take a few moments to set up some strings and other variables before presenting the main menu where selections are single key entry so you don't need to press **Enter**. Each selection lets you examine or edit different portions of the disc, and each has its own set of commands.

**D) View/Hide Directory.** The eight directory sectors will be read into memory in one operation and you may then scroll through the list entries by using the cursor up and down arrow keys. If you hold down **Control** with these keys, the selection will move forwards or backwards by four entries.

The screen will also show the surrounding 8 file entries, with an arrow pointing to the current selection. The various bit-mapped information bytes are decoded at the bottom of the screen. Typing **N** or **E** will allow you to change the name or extension while **S** and **T** will accept new values for the First Sector and Total Sector Count items respectively. If you make a mistake in entering any of these you will be asked to re-enter the item. The file information flags shown on the right may be toggled **O**

## Part 8 of ANDRÉ WILLEY's series on the Atari's input/output facilities

and off as indicated on the screen menu.

Enter **W** to write the modified directory to disc, and **Escape** or **Q** to quit and return to the main menu.

**V) View/Hide Volume Table of Contents.** This will read the VTDC (sector) containing the map of free disc space and allow you to view or modify it. If the disc is in extended density then the new VTDC sector is will be generated by DISCVIEW and displayed as one table for your reference.

Use the cursor keys to move the cursor around the table - hold down **Control** to move five spaces at a time. You may also use the **N** and **S** keys to go on to the next sector or back to the last one. The number of the one you are currently viewing will be displayed at the bottom of the screen, along with the current free sector count. Pressing the spacebar will toggle a sector between being in use and free.

Enter **W** to write the VTDC back to the disc, and **Escape** or **Q** to quit and return to the main menu.

**S) View/Hide Sector Links.** This option of the program will allow you to view any sector on the disc, and perhaps alter its forward reference information contained within the last three bytes. If you wish to edit the actual data portion of the sector then you should use Bruce Woodford's program from the August issue of *Atari User* since DISCVIEW was not designed for this purpose.

Once a sector has been displayed you may use the **N**, **F** or **O** keys to input new values for the byte count, file number or Next sector pointer respectively. The file number should always be the same as that given by the Directory View/Hide option so you

will get a 100 score when attempting to access the file from Dos.

You may continue to the next logical sector following the next sector pointer value whenever possible by pressing **C**, but this will not write any modified data back to the disc. Use **W** for write if you wish to save the data before continuing. Be careful of using the sector write option unless you are sure of your modifications, because it does not prompt you before updating the disc. **O** or **Escape** will simply quit the current edit and take you back to the main menu.

**B) View/Hide Sector control.** The first sector on a Dos 2.05 5 disc contains important information about the way Dos will perform. Much of this is not user alterable, but you may toggle the active drive allocation values by pressing keys 1 to 8 accordingly. Pressing **B** will allow you to change the number of disc file buffers to be used.

Once again, you may then use **W** to write the sector back again, and **O** or **Escape** to quit back to the menu.

**C) Change drive number.** This simply allows you to enter a new drive number (between one and four). The disc in the new drive will then be checked and you will be warned if it is not in the correct format. All future operations will then take place using the new drive.

**E) Exit.** This will quit the program and return you to Basic. Pressing **O** or **Escape** from the main menu will also end the program.

DISCVIEW is certainly not the final answer to disc editing - but at least it will allow you to examine the way that Dos works without getting too much of a headache trying to sort out the numbers. As with all programs of this nature, don't forget to only view and edit a backup of your data disc or a wrong keypress could end up ruining hours of work in error.

Well, this concludes our tour through the IO and disc handler systems, but in a future issue I'll take a deeper look into the operating system to reveal how the Serial Input/Output (SIO) routines transfer your data to the various peripherals.

Turn to Page 24 for





# I/O Channels

40 From Page 38

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# Micro route to the sun

**ANDY DORAN finds a new use for the Mini Office II spreadsheet**



Most people use spreadsheets as boring programs to use for accounts. This means that lots of interesting uses are overlooked. Let's explore a different use of a spreadsheet using Mini Office II.

If you glance through the glossy pages of a holiday brochure you'll see weather reports and tables which give an indication of the amount of sunshine or rain that a particular resort can expect during the summer months. Such a table can be displayed using a spreadsheet - and with Mini Office II the results can also be shown graphically.

Take the typical British work shown in Figure 1. These figures can easily be

and enter 8 followed by Return. From now on we will assume that you remember to press Return as you make an entry. Once this has been done, pressing Escape takes you back to the spreadsheet menu.

Pressing Escape once more will take you to the spreadsheet itself (at present blank). You use the arrow keys to move the cursor around and at the top of the screen you'll notice the status area.

As the cursor is moved these changes to indicate which cell the cursor currently occupies (such as A5 or B10) which data has been entered other sections of the status line such as contents change to show what is actually

need to enter the labels for Sun, Rain and Temp so use the GOTO function to move to cell A3.

The column width at present is 7 which is not big enough to allow the label Rain (which) to be entered.

The width of column A for any other column can easily be altered by pressing Control+W. You will be prompted for the new column width so enter 13 to allow room for the label. Now you can enter the labels for Sun, Rain and Temp in the same way as you did for the date.

Now your spreadsheet is labelled and ready for you to enter data - except for one thing. You need to enter some formulae to get the information you were originally looking for - averages and so on.

Use the GOTO command to move to cell D1 and label it AVERAGE. Label cells D1 and E1 MAX and MIN respectively and now move to cell G2. This cell will contain a formula to calculate the average daily sunshine (in hours) over the week. The formula is

$D2+(E2+G2+H2+I2+J2+K2+L2)/7$

Fortunately Mini Office II allows you to abbreviate this formula using # to stand for sum of. So the formula becomes

$D2=(E2+H2)/7$

Pressing Control+F allows you to enter the formula. The left hand side of the formula (D2-1) appears in the status area and by typing (E2+H2)/7 you will have entered a formula into cell G2. This will need 0 as first as no data has been entered.

The formulae for cells I2 to L2 are

**Turn to Page 22**

	MON	TUE	WED	THU	FRI	SAT	SUN
Sun (hours)	8	7	7	8	8	8	8
Rain (inches)	3	2	3	3	1	0	1
Temp (Celsius)	26	28	27	31	32	28	30
Temp (Fahrenheit)	24	34	26	28	26	28	27

Figure 1 A typical week's weather

entered into the spreadsheet and produce useful figures such as averages.

Now we'll move on to the program. Once you're loaded in you need to make some changes to the default values given. For instance, there is no point in having two decimal places for numbers. To make these changes select Alter screen display from the main menu and you will move to second menu. The options given are clearly explained on pages 48 and 52 of the Mini Office II manual.

You need to alter the number of decimal places to 0 so simply highlight the option decimal places

in each cell.

The first thing that you need to do is to enter the labels for the spreadsheet - so you know what the values mean later on. To do this we need to move the cursor to cell B1 either by using the cursor keys or the GOTO command - pressing Control+G together gives the prompt G1 in the status area and to move to cell B1 just enter B1.

Now you are at cell B1 you can enter the relevant label. Just type the letters MON and move to cell C1 where you type TUE. Continue until all the days have been entered and you should end up with SUN in cell H1. You now

—From Page 28

similar to the one you have just entered so rather than enter them again copy them. Make sure this cursor is in cell B2 and press Shift-R.

A message in the status area tells you to enter the cursor to the cell you wish to copy to so move the cursor to cell D2 and press Return. The status area now asks if the formula is to be copied. Absolutely correctly the same with no changes at Relative (alternatively, but with changes such as B2 becomes D2).

We need to copy the formula B2e1 only so press R for each part of the formula (leave in this case). The new formula D2=100\*(B2e1) will now be shown in the status area and can be copied to D4 and D6 in a similar way. The formula for MAC is in J2 to J4 you require the formula for the maximum of the numbers between B2 and B2. This is D2=D2\*(B2e1).

Enter this in the same way as you entered the formula for B2 and copy it into the other cells in the column UD to J24.

The formula for MN is similar to the

formula for MAC, except that the less than (<) sign is used instead of the greater than (>) sign to enter the last of our formula into column N starting with N2=N2\*(B2e1).

It is a good idea at this point to save the spreadsheet. This is done by pressing Escape to return to the spreadsheet menu and choosing the Save Spreadsheet option will then save the computer to prompt.

## D1

At this point enter the name under which this file will be saved. It is best to give a descriptive filename so that in future there is no need to guess the contents of the file. Make sure that there is a formatted disc in the drive - and use the Mail Office II disc. If you haven't already got one a disc may be formatted by using the option from Mail Office II which is available after a directory. Type WEAATHER 501 for this as the first version of the spreadsheet. Your spreadsheet will now be saved to disc.

Once you have reached this stage most of the hard work has been done. All that remains is to enter the actual

data by moving to the relevant cell and typing the number.

For example move to cell B2 and type 5 Return. When you have entered all the data, save the spreadsheet again and you're then ready to print it.

From the main menu choose Print Spreadsheet by moving to the print option. You'll have noticed that your spreadsheet has empty rows and columns at the bottom and right-hand edges. It is wasting time printing the extra thing so choose the option Print Part Spreadsheet and enter the following:

Row 1-6  
Column A-K

The result will be that only the relevant part of the spreadsheet is printed and when this is completed you will be returned to the print spreadsheet menu. Press Escape to return to the spreadsheet menu and you're ready to save graphics data.

■ Next month we'll look at how to prepare this small spreadsheet generally. MAIL! Then, create some spreadsheets and save them!

# The truth about TELEX

## How much does it cost to go on Telex?

You could go the international way and buy a dedicated Telex machine. The cheapest will cost you £1,500 (plus telephone), the device (GEM) line (Crested) you will then need a separate telephone line costing £1,000 to install plus £600 a year rental. That's a total outlay over the first year of a minimum of £3,100. All prices include VAT. Or you could go the other way and more than once and doing - get your message as simple as a text machine. And just for your ordinary telephone.

## How do I turn my Atari into a Telex machine?

All you need is a modem and appropriate communications software (see the advertisements in this issue), a telephone, and a subscription to Minitelink. Minitelink is just one of a growing number of services available to Atari users on Minitelink. Minitelink lets you (you can also read the news in a magazine, go shopping, create your own closed user groups, send messages and electronic mail, sign round the world, download files, and more), directly into your program, and much more.

## But why use Telex?

Because it's a standard means of instant communication between business. Today there are 114,000 Telex machines in use in Britain - and more than 2 million elsewhere. It's used to domestically speed up business communications - just as quick as using the phone, but far more efficient, because you have a hard copy of every conversation. For your records.

But there's a big bonus you get when you use Minitelink for Telex: that the conventional way doesn't require, so far in your office as send or receive "long" (which Minitelink you don't require), so far in your office as send or receive "long" messages. You can just sit easily use your computer at home for most a (personal) message. You can just sit easily use your computer at home for most a (personal) message. You can just sit easily use your computer at home for most a (personal) message.

Now it's your  
turn to make a

# An amazingly easy way out

by  
Rouloc

HELLO all you fellow adventurers. It's your old pal Rouloc back again to hold court on the world of Adventure. It's good to put my feet up and enjoy a fine ale while I talk to you of high adventure and after the month I have just had it's about time I rested.

For three weeks solid I was fighting the evil gargoyle Malach before my truly sword behemoths the foul ones here. But now on to a subject that all adventurers hate - mazes.

Why do adventure writers still persist in using the infernal things? We all know how to map them (don't we?) and that once they are mapped the route through them is obvious. So the whole exercise is pointless.

The real reason for the dreaded maze is that the programmer wants an easy get out when he is stuck for another puzzle. Instead of finding another trick he throws in a quick maze just to use up playing time.

There are exceptions, of course, and the original Cave adventure from Gretnah and Woods, with its 'hearty tale passages' and 'little twisty passages', is one of them.

It was the first one of its type and also it had the added problem of the plate sliding and taking my objects that were dropped. This made mapping very trying indeed.

In Infocom's Hollywood Hymn, the maze is justified because there's a puzzle attached to it. It takes the form of a Hidden map of the maze you have to find and, believe me, if you have had to sk through so many mazes as I have, you would not retain your sanity.

What do you think of the maze situation? Write in and tell me, but in the meantime if anybody is writing an adventure and is about to put in a maze - don't!

The more Infocom releases are in the pipeline. Plumbed Hearts is a true romance story and there's also a rather weird game which goes by the name of Wind in Bent.

I couldn't make Head or Tail of it but I'm led to believe it contains eight short stories built round the village of Funnier, where everything, but a

double meaning, and things are not quite what they seem.

If all sounds very strange to me, but not unusual if it's Infocom it's got to be good!

Remember Flayed the lovable little robot in Planetfall? Well the good news is that he has returned as a new adventure written by Steve (Planetfall) Leather - Goddesses, Witches/Wizards Monthly.

Planetfall carries on the story of your meepod, now since your salvation of the planet, Beside which earned you a promotion to Lieutenant First Class. No more adventures in or between details for you. Instead you are in charge of the planet's routine, which ensures that all types of items are in good supply.

The story starts after you have been ordered to go to a nearby space station to collect more items. The orders are that a duty robot should be assigned to aid you, and as you go to the robot goes to choose one there is old Flayed sitting in his tub playing darts!

The game is quite user friendly and feels quicker and more playable than its predecessor, with some excellent puzzles mixed in with good humour. If you add this to the new style packaging, which still contains all the usual Infocom base and prices, it is a game you will be proud to put into your collection. You can read a full review of Planetfall on page 19 of this issue.

Turn to Page 32

See you next month



# Postbag



GRATEFUL. Caroline from Dublin is stuck in Return to Eden. He keeps getting killed when the tunnels underground and finds the shovel.

The answer, my friend, is that you only have a set number of moves before the Snowball spaceship finds you and blasts you. So start again and go straight to the shovel, then go down and find a leafy cave underground and sleep until the ship passes by.

Raven replies to Len's letter about Ultima IV with information on the characters, told well, you're in Trinsic, Peladiv Geoffrey in Sholeen and Sholeen in Sholeen. Also a black stone can be found at Moss gives you a pet. When it comes up go and press SHANON.

Mr. White is in trouble in Alterego

Finally because he keeps running out of food and dying. The reason he cannot enter the area is the price is that they are interested in the future. As far as eating is concerned, try going to an inn and staying the night.

L.C. Williams has a problem in Alterego, which is a real shame as he has 280 points. He is stuck after he enters the floor a hybrid because Peter keeps telling him with a small. Also anyone got the answer?

Finally Colin Chambers can't work out the wonder puzzle in Return to Eden. Just wait one turn after it arrives for it to discharge its load, then enter it and wait three moves and it will be in the NW corner, then leave it.



Master of the North

Master of the South

Master of the East

Master of the West

Master of the North

Master of the South

# Hints & Tips

NOTE: see the answers to Gaurun's puzzles in Return to Eden.

Game in the box  
COMPUTER

When you are four feet tall, then don't show but more than the number of 100.  
JAN

High man wants it, the poor man has it  
NOTHING

Our blood is cold beneath our wind man with  
FIRE

This blind god compares all  
LOVE

Too old, lower me, you don't trust me yet you give me life  
NEVER

A great healer, darkness, he runs out and flies away  
SILENCE

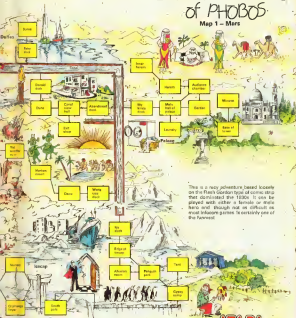
When I wake you sleep I feel me, I am here though you can't see me  
LIFE

A pet to worry he belongs to, welcome as he holds our fingers warmly  
FIRE



## LEATHER GODDESSES of PHOBOS

Map 1 - Mars



This is a very adventure-based locale on the Flash Gordon type of comic strip that dominated the 1930s. It can be played with either a female or male hero and though not as difficult as most Indiana games, it certainly one of the funnest!

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250	18.00	14.00	10.00	6.00	3.00	1.50	0.60
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Model 900	900.00	Model 1000	1000.00	Model 1100	1100.00	Model 1200	1200.00
Model 1300	1300.00	Model 1400	1400.00	Model 1500	1500.00	Model 1600	1600.00
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## TRANSDISK IV

Commercial tapes CAN be transferred to disk!

READ ON!

Are you tired of having the cassette games to load? Would you like to transfer them to disk for faster, more reliable and convenient loading? You may have heard or read that this is not possible. Well, not only is it possible, but there is a program, Transdisk IV, that will do it all automatically. You require no knowledge of disks or the potential of the computer. To play simply Transdisk IV will use the Atari 400/800 cassette tapes, multi-stage non-alphanumeric (NAN) programs, remove the protection, place them on disk for you. Plus, to protect the new disk version of a program, Transdisk IV will use the Atari 400/800 cassette tapes to create a program requires just a few keypresses from a Commodore 64/128 disk.

The cost of this, the most powerful tape to disk utility for the Atari is just \$24.99 (includes all disk and delivery). Also comes complete with user manual and documentation which were recently written with the cassette program and first time disk user in mind.

Requires: Atari 400/800, or 1200 Computer with disk drive and cassette recorder.

Remember, that not only will you save money on upgrades in the future (if they are available), but many games are only available on cassette anyway so Transdisk IV has to be a worthwhile investment!

Send an SAE or phone for more details of the utility.

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# Knockout Whist

**OLIVER CHAPPELL**  
revamps an old favourite

BEAT your Atari computer in this familiar card game. You need a combination of luck and skill — luck is involved when you are dealt your hand, skill as you decide which cards the computer will has left and you choose the card to lay.

The object of the game is to win tricks so you can choose trumps for the next hand. Once you take all the tricks in a hand you win the entire game.

You start with seven cards — in each subsequent hand you'll have one less. Whoever takes the most tricks in a hand chooses trumps next time — a considerable advantage. In the event of a draw (you both have the same number of tricks) the computer will randomly determine trumps.

When the game has loaded and is run you will be presented with seven cards — trumps will already have been randomly chosen and indicated in the bottom left of the screen. Also, the message 'My Trumps' or 'Your Trumps' indicates whether the computer or you have control of that particular hand.

To lay a card press keys 1 to 7 which correspond to the cards displayed from top left. The computer will then display its card, and decide who's won.

When you have to choose trumps use Options, Select and Start as explained on the screen.

The game will give you hours of fun as you challenge the computer. Good luck.

## PROGRAM BREAKDOWN

10-140	Main routine — sets up variables
150-190	Shuffles deck and deals hands
200-210	Resets to suit numbers to represent cards
300-3000	Sets up screen for cards dealt
400-4100	Find of hand number decides who chooses trumps
450-4600	Chooses if game is won outright
500-5100	Chooses who lays first and prompts them to lay first card
600-6100	Allows you to lay your card and displays it on screen
620-6300	Chooses who wins trick
640-6500	Produces sound if computer won trick
660-6700	Produces sound if you win trick
680-6900	Chooses for wrong keypress
700-7100	Displays trumps
720-7300	Moves out which card to lay
740-7500	Tells you they have no tricks
760-7700	Displays symbol when trumps have been chosen and tells program who should lay first
810-8100	Chooses with computer choosing trumps
820-8300	Prompts trumps and who has chosen them
840-8500	Allows you choose trumps, obtains trump advice or selects random trumps
860-8700	Allows you to get computer's advice about trumps
1000-10000	Introductory screen
2000-20000	Reads in control characters for the game

Start on  
Page 68







If you're frustrated by the difficulty of transferring short machine code routines with Basic, on the Atari here is a routine to make your problems.

Moving the code is no trouble, using, for example, an Atari Assembler Editor cartridge. Atari Basic does allow calls to machine code programs via the USR function. The problem is getting the machine code into memory.

Basic does *can* do this by using the `DIS` (Load binary) function. It can load the assembled object code before loading the Basic program that uses it.

This is, however, a little cumbersome and you can easily forget to load in the machine code routines before running the Basic program that calls it. Cassette users are not even that lucky. Atari Basic doesn't support binary load from cassette at all.

You can convert the codes by hand to decimal and code them directly into memory or into data statements, but this is hard work that is tedious and takes a long time.

Machine Code Manger solves many of these problems in a relatively quick and easy to use fashion. It takes the assembled machine code from an object file on cassette or disc and creates Basic data statements containing the codes, together with a loader routine. This can be merged with a Basic program so the machine code is loaded by the program itself.

When you run the routine you will be presented with a menu containing three options — Load binary (object code), Write Basic code and Quit.

Select 1 to load in your machine code routine. You can load from cassette or disc and the program will tell you the start address of the code and the number of bytes it contains. You will then be returned to the menu.

The second option creates and writes the Basic data code to merge with your Basic program. You will be asked what Basic line you want the GOTO statements to start at. If you just press Return, the default of line 10000 — which is just after the very end of most Basic programs — will be chosen.

You will then be asked if the machine code is relocatable. If you select relocatable, you will be asked for the name of the Basic string you wish to hold the machine code data in — the default is `MCB`.

You are then asked for the output device. Any of the standard Atari devices can be used such as 0 to refer to the screen, 1 to point on a printer, 2 to refer to cassette, or 3 to refer to disc.

If you have a disc drive then you

# Packing code into memory the easy way

**MARTIN MALE** shows how to include machine code in Basic data

need only write the filename and can leave off the `D:` device specifier if you wish. If you hit Return only, the data will be filed to the screen. When the Basic statements have been written you will be returned to the main menu again.

To use the routine you must first assemble your machine code using any assembler and save the object code to cassette or disc. Then load and run Machine Code Manger. Type 1 to load the object code, then 2 to create the Basic code.

You can list it to the screen first if you wish to see what the code looks like by entering `C:`, or just Return as the output device. Then select 2 again at the main menu to write the code to disc or cassette, the tape, entering `D:` filename or `C:` as the output device.

To merge the file into your Basic program, first load in your Basic program, then type `ENTER "D: filename"` or `ENTER "C:"`. If you then list the program you will see that the loader routine and the machine code data has been added to your program.

At the beginning of your Basic program add a `GOTO#B 10000` if you have used the default starting line. When the program is run this will load the machine code held in the data table made up memory.

To call the routine use the statement

```
GOTO#B:CALL J,INT,=1
```

The start address (START) of your machine code routine can be found with `ADR(MCB)` if the routine has been specified as relocatable. The other parameters, `part` and `part2` and so on, are variables you may be passing to

your routine.

Your routine can also pass a single two byte 30 to 65535 number back to Basic using the variable `X` by storing the number in locations (internal) 212 (integer) and 213 (in bytes).

Finally, here's some points about the program.

■ Machine Code Manger will write two different loader routines and store the machine code differently depending on whether you say your code is Absolute or Relocatable.

■ If your code is relocatable (that is, it contains no absolute references to specific machine code addresses) in a Basic string called `MCB`. If the routine is not relocatable it is `POKE'd` directly into memory at the address it was assembled with.

■ You should note that if you do write absolutely located routines be sure to locate them where they will not interfere with Basic (page 8 is usually a safe place to put them).

■ The program cannot handle composite object files (ones that have been appended using `DIS` or programs assembled using multiple angles).

■ You can have more than one routine in your program by specifying a different starting line number. So each routine you cannot, however, when the routines are relocatable to make sure that the names of the strings that contain the machine code are different (`MCB2`, `MCB3` and so on) before you run your final program.

They can be changed after you have merged them if you did not choose different names when running Machine Code Manger.

See us Page 48 B

## Feature

[illegible][illegible][illegible][illegible]

1.000	0.900	0.800	0.700	0.600	
99	10.0	99	10.0	99	10.0
98	10.1	98	10.1	98	10.1
97	10.2	97	10.2	97	10.2
96	10.3	96	10.3	96	10.3
95	10.4	95	10.4	95	10.4
94	10.5	94	10.5	94	10.5
93	10.6	93	10.6	93	10.6
92	10.7	92	10.7	92	10.7
91	10.8	91	10.8	91	10.8
90	10.9	90	10.9	90	10.9
89	11.0	89	11.0	89	11.0
88	11.1	88	11.1	88	11.1
87	11.2	87	11.2	87	11.2
86	11.3	86	11.3	86	11.3
85	11.4	85	11.4	85	11.4
84	11.5	84	11.5	84	11.5
83	11.6	83	11.6	83	11.6
82	11.7	82	11.7	82	11.7
81	11.8	81	11.8	81	11.8
80	11.9	80	11.9	80	11.9
79	12.0	79	12.0	79	12.0
78	12.1	78	12.1	78	12.1
77	12.2	77	12.2	77	12.2
76	12.3	76	12.3	76	12.3
75	12.4	75	12.4	75	12.4
74	12.5	74	12.5	74	12.5
73	12.6	73	12.6	73	12.6
72	12.7	72	12.7	72	12.7
71	12.8	71	12.8	71	12.8
70	12.9	70	12.9	70	12.9
69	13.0	69	13.0	69	13.0
68	13.1	68	13.1	68	13.1
67	13.2	67	13.2	67	13.2
66	13.3	66	13.3	66	13.3
65	13.4	65	13.4	65	13.4
64	13.5	64	13.5	64	13.5
63	13.6	63	13.6	63	13.6
62	13.7	62	13.7	62	13.7
61	13.8	61	13.8	61	13.8
60	13.9	60	13.9	60	13.9
59	14.0	59	14.0	59	14.0
58	14.1	58	14.1	58	14.1
57	14.2	57	14.2	57	14.2
56	14.3	56	14.3	56	14.3
55	14.4	55	14.4	55	14.4
54	14.5	54	14.5	54	14.5
53	14.6	53	14.6	53	14.6
52	14.7	52	14.7	52	14.7
51	14.8	51	14.8	51	14.8
50	14.9	50	14.9	50	14.9
49	15.0	49	15.0	49	15.0
48	15.1	48	15.1	48	15.1
47	15.2	47	15.2	47	15.2
46	15.3	46	15.3	46	15.3
45	15.4	45	15.4	45	15.4
44	15.5	44	15.5	44	15.5
43	15.6	43	15.6	43	15.6
42	15.7	42	15.7	42	15.7
41	15.8	41	15.8	41	15.8
40	15.9	40	15.9	40	15.9
39	16.0	39	16.0	39	16.0
38	16.1	38	16.1	38	16.1
37	16.2	37	16.2	37	16.2
36	16.3	36	16.3	36	16.3
35	16.4	35	16.4	35	16.4
34	16.5	34	16.5	34	16.5
33	16.6	33	16.6	33	16.6
32	16.7	32	16.7	32	16.7
31	16.8	31	16.8	31	16.8
30	16.9	30	16.9	30	16.9
29	17.0	29	17.0	29	17.0
28	17.1	28	17.1	28	17.1
27	17.2	27	17.2	27	17.2
26	17.3	26	17.3	26	17.3
25	17.4	25	17.4	25	17.4
24	17.5	24	17.5	24	17.5

# SPECIAL FX



Scrolling... Scrolling... Scrolling...

**WELCOME** to the third installment of Special FX. We'll follow on from last month's article with another DLI and explore the Atari's scrolling features. The Atari is still the most powerful 8-bit graphics computer and even the ST has no hardware facilities that can duplicate effects produced with the dedicated graphics chip, Amiga.

Scrolling is this month's subject for a special effect and again, even if you don't understand the theory, you'll still have a Basic program that can be used in your own programs.

Scrolling can be defined as the movement of information around the screen when new material appears on one of the edges. For example, each time you hit a Basic program the data scrolls on to the screen from the bottom and off at the top. This is a very simple type of scroll and many computer games have far more complex versions.

Arade games even have more than one level of scrolling to give a 3D depth effect. Atari User has already covered the subject of scrolling so there is no need for a full explanation but if you missed the articles that are in volume 1 issues 8 and 7 (October and November 1985).

Basic has no reserved word support for controlling scrolling and as all work has to be done with the PEEK and POKE statements, if the scroll routine is written in Basic and not machine code you will find that it is too slow and the result is a jerky screen with very slow movement.

Machine code is the only answer

## In the third part of his series on amazing effects RICHARD VANNER takes a look at scrolling messages

and in fact the Atari only really exists in performance when programmed in machine code.

Now you've heard the bad news don't get dejected because this program is designed to help you understand it all. Program 1 is in Basic and is a scrolling banner routine that works in a DLI.

All you have to do is put your text string into A8 and call the routine. The machine code finds the text in A8 and starts a DLI running. This continually takes data from A8 and scrolls it from right to left. Once this DLI is set up it works on its own and leaves the rest of the processing time for your Basic program.

A couple of small points about the routine are to make sure the text in A8 is in upper case and terminate it with the \$ character. This informs the DLI when to start relinking data from the start of A8 again.

This may seem a very easy routine to write but the problem with scrolling is knowing exactly where the screen data is. Basic is not the best language for letting you know this so it makes life a great deal harder.

If you do want to explore scrolling then you should use an assembler as it is a lot easier. So let's have a look at

the machine code. It's all stored in page 8 — that over-used area of memory which is safe from the friendly memory eating Basic.

Listing 8 is the source code of the program and shows much smoother scrolling. The display list (label DLIST) is a copy of the GRAPHICS 2 display list with a few alterations.

A DLI bit is set at the beginning to allow for the DLI to take place, then the third blank line is replaced with the scroll line. This is in Amiga mode 8 or Graphics 1.

The rest of the screen is the same as it is in the operating system. The code is called in label START and here the address of A8 is pulled of the stack and the address of the screen is placed into my display list.

Finally the DLI vector is set to point to DLIST and NMIEN (\$0400) is set to recognise DLI's. Finally the RTS returns the system to Basic. The next routine DLI1 is then called each time Amiga finds a DLI bit set in the mode line. It is drawing. In our case this is right at the top of the screen.

The DLI routine keeps fine scrolling the scroll line until it needs to do a coarse scroll when it takes 40 bytes from A8 and places it on to the scroll line.

Turn to Page 62

## Series

1. *Journal of Management Studies*, 1997, 34, 1, 1-14.

[illegible]

```

% 计算 1000 以内所有素数的平方和
sum=0;
for i=2:1000
    if isprime(i)
        sum=sum+i^2;
    end
end
sum

```

运行结果如下：

```

sum =
    3339141

```

例 3-10 求 1000 以内所有素数的平方和。

```

% 求 1000 以内所有素数的平方和
sum=0;
for i=2:1000
    if isprime(i)
        sum=sum+i^2;
    end
end
sum

```

运行结果如下：

```

sum =
    3339141

```

117, 199, 201, 203, 204, 209, 21, 217, 221, 223, 225, 227, 229, 231, 233, 235, 237, 239, 241, 243, 245, 247, 249, 251, 253, 255, 257, 259, 261, 263, 265, 267, 269, 271, 273, 275, 277, 279, 281, 283, 285, 287, 289, 291, 293, 295, 297, 299, 301, 303, 305, 307, 309, 311, 313, 315, 317, 319, 321, 323, 325, 327, 329, 331, 333, 335, 337, 339, 341, 343, 345, 347, 349, 351, 353, 355, 357, 359, 361, 363, 365, 367, 369, 371, 373, 375, 377, 379, 381, 383, 385, 387, 389, 391, 393, 395, 397, 399, 401, 403, 405, 407, 409, 411, 413, 415, 417, 419, 421, 423, 425, 427, 429, 431, 433, 435, 437, 439, 441, 443, 445, 447, 449, 451, 453, 455, 457, 459, 461, 463, 465, 467, 469, 471, 473, 475, 477, 479, 481, 483, 485, 487, 489, 491, 493, 495, 497, 499, 501, 503, 505, 507, 509, 511, 513, 515, 517, 519, 521, 523, 525, 527, 529, 531, 533, 535, 537, 539, 541, 543, 545, 547, 549, 551, 553, 555, 557, 559, 561, 563, 565, 567, 569, 571, 573, 575, 577, 579, 581, 583, 585, 587, 589, 591, 593, 595, 597, 599, 601, 603, 605, 607, 609, 611, 613, 615, 617, 619, 621, 623, 625, 627, 629, 631, 633, 635, 637, 639, 641, 643, 645, 647, 649, 651, 653, 655, 657, 659, 661, 663, 665, 667, 669, 671, 673, 675, 677, 679, 681, 683, 685, 687, 689, 691, 693, 695, 697, 699, 701, 703, 705, 707, 709, 711, 713, 715, 717, 719, 721, 723, 725, 727, 729, 731, 733, 735, 737, 739, 741, 743, 745, 747, 749, 751, 753, 755, 757, 759, 761, 763, 765, 767, 769, 771, 773, 775, 777, 779, 781, 783, 785, 787, 789, 791, 793, 795, 797, 799, 801, 803, 805, 807, 809, 811, 813, 815, 817, 819, 821, 823, 825, 827, 829, 831, 833, 835, 837, 839, 841, 843, 845, 847, 849, 851, 853, 855, 857, 859, 861, 863, 865, 867, 869, 871, 873, 875, 877, 879, 881, 883, 885, 887, 889, 891, 893, 895, 897, 899, 901, 903, 905, 907, 909, 911, 913, 915, 917, 919, 921, 923, 925, 927, 929, 931, 933, 935, 937, 939, 941, 943, 945, 947, 949, 951, 953, 955, 957, 959, 961, 963, 965, 967, 969, 971, 973, 975, 977, 979, 981, 983, 985, 987, 989, 991, 993, 995, 997, 999, 1001, 1003, 1005, 1007, 1009, 1011, 1013, 1015, 1017, 1019, 1021, 1023, 1025, 1027, 1029, 1031, 1033, 1035, 1037, 1039, 1041, 1043, 1045, 1047, 1049, 1051, 1053, 1055, 1057, 1059, 1061, 1063, 1065, 1067, 1069, 1071, 1073, 1075, 1077, 1079, 1081, 1083, 1085, 1087, 1089, 1091, 1093, 1095, 1097, 1099, 1101, 1103, 1105, 1107, 1109, 1111, 1113, 1115, 1117, 1119, 1121, 1123, 1125, 1127, 1129, 1131, 1133, 1135, 1137, 1139, 1141, 1143, 1145, 1147, 1149, 1151, 1153, 1155, 1157, 1159, 1161, 1163, 1165, 1167, 1169, 1171, 1173, 1175, 1177, 1179, 1181, 1183, 1185, 1187, 1189, 1191, 1193, 1195, 1197, 1199, 1201, 1203, 1205, 1207, 1209, 1211, 1213, 1215, 1217, 1219, 1221, 1223, 1225, 1227, 1229, 1231, 1233, 1235, 1237, 1239, 1241, 1243, 1245, 1247, 1249, 1251, 1253, 1255, 1257, 1259, 1261, 1263, 1265, 1267, 1269, 1271, 1273, 1275, 1277, 1279, 1281, 1283, 1285, 1287, 1289, 1291, 1293, 1295, 1297, 1299, 1301, 1303, 1305, 1307, 1309, 1311, 1313, 1315, 1317, 1319, 1321, 1323, 1325, 1327, 1329, 1331, 1333, 1335, 1337, 1339, 1341, 1343, 1345, 1347, 1349, 1351, 1353, 1355, 1357, 1359, 1361, 1363, 1365, 1367, 1369, 1371, 1373, 1375, 1377, 1379, 1381, 1383, 1385, 1387, 1389, 1391, 1393, 1395, 1397, 1399, 1401, 1403, 1405, 1407, 1409, 1411, 1413, 1415, 1417, 1419, 1421, 1423, 1425, 1427, 1429, 1431, 1433, 1435, 1437, 1439, 1441, 1443, 1445, 1447, 1449, 1451, 1453, 1455, 1457, 1459, 1461, 1463, 1465, 1467, 1469, 1471, 1473, 1475, 1477, 1479, 1481, 1483, 1485, 1487, 1489, 1491, 1493, 1495, 1497, 1499, 1501, 1503, 1505, 1507, 1509, 1511, 1513, 1515, 1517, 1519, 1521, 1523, 1525, 1527, 1529, 1531, 1533, 1535, 1537, 1539, 1541, 1543, 1545, 1547, 1549, 1551, 1553, 1555, 1557, 1559, 1561, 1563, 1565, 1567, 1569, 1571, 1573, 1575, 1577, 1579, 1581, 1583, 1585, 1587, 1589, 1591, 1593, 1595, 1597, 1599, 1601, 1603, 1605, 1607, 1609, 1611, 1613, 1615, 1617, 1619, 1621, 1623, 1625, 1627, 1629, 1631, 1633, 1635, 1637, 1639, 1641, 1643, 1645, 1647, 1649, 1651, 1653, 1655, 1657, 1659, 1661, 1663, 1665, 1667, 1669, 1671, 1673, 1675, 1677, 1679, 1681, 1683, 1685, 1687, 1689, 1691, 1693, 1695, 1697, 1699, 1701,

[illegible]

Living in darkness: Charles Dickens

[illegible][illegible]

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001010	1010	001010
001011	1011	001011
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001111	1111	001111
010000	0000	010000
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101000	1000	101000
101001	1001	101001
101010	1010	101010
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101110	1110	101110
101111	1111	101111
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110001	0001	110001
110010	0010	110010
110011	0011	110011
110100	0100	110100
110101	0101	110101
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# CHOPPER RESCUE

By GEOFFREY STOREY



ON a mission into an enemy country five of your men have been captured into the sea and you have to fly in to rescue them. You have one of the fastest super helicopters, equipped with the latest armament, and your task is to rescue the men as they struggle ashore.

There may sound easy but you have limited fuel and an enemy bomber is covering the area dropping bombs and large rocks in an attempt to destroy your helicopter and stop the rescue.

Your helicopter is controlled by the joystick plugged into port one and you fire by moving it in the appropriate direction and pressing fire. If shooting downwards you can blast a tunnel to the trapped men.

Once a passage is clear you can move the helicopter through the narrow tunnel. You pick a man up by positioning your helicopter over the man and once he has boarded the craft you fly him to the safe landing platform on the left of the screen.

Watch for the plane which is dropping rocks and bombs - shoot it if you can. Once you touch down on the pad the man will jump out and you can return to rescue the next one. Remember, you can only collect one man at a time.

You start the game with three lives and lose one if you are hit by a bomb or rock or if you crash into any other object on the screen.

The men can also be killed by the bombs and rocks. It's easy to land on a dead man but not surprisingly, you cannot pick him up. If you crash when carrying a man he dies and you lose a life.

There are 10 screens on the first level and you have to collect five men on each one. When these screens have been completed you move to level two where you have to rescue six men - and so on.

After 10 levels the game restarts at level one, but this time considerably faster.

## SCORE TABLE

Action	Score
Shooting out of rocks	1
Picking man up	20
Shooting the bomber	50
Taking man to safety	80
Shooting falling bomb or rock	100

Turn to Page 48 for

# PROGRAM BREAKDOWN

100-240	Main loop
240-360	Fire routine
360-480	Refuel routine
480-600	Move airplane
600-720	Bank, yaw, roll, etc. routines
720-840	Explosion generator
840-960	Collision detection
960-1080	Bullet collision detection
1080-1200	Explosion routine
1200-1320	Tracking, bombs, and rock routine
1320-1440	Bombs or rock landed
1440-1560	Update score
1560-1680	Pick up main routine
1680-1800	Drop bomb on safe pad
1800-1920	Score level
1920-2040	Reset hit bombs or rock
2040-2160	Main done
2160-2280	Turn for completing level
2280-2400	Aeroplane hit routine
2400-2520	Game over
2520-2640	Draw screen
2640-2760	Player handles and VDU routines
2760-2880	Initialize variables
2880-3000	Poke new character set data
3000-3120	Display hit information

# VARIABLES

DEF	Default of each level
D	Main filled variable
LEV	Holds current screen level
NUM	Number of men left to rescue
NR	Number of men rescued
FU	Fuel tank
MAN	Man rescued on particular level
ON	If you have men D=1 or 0 otherwise
SC	Score
IR	High score
LI	Lines left
P	Has bullet been fired flag
S	Score parameter for explosion
SD	Bomb drop flag
IF	Plane move flag
LM	For next long parameter
CLEAR	Clear out for player handles
PL	Lead player variable
CRIBET	PLG's memory address
A	New character's memory address
MEM33	Memory variable for reading data
DISP	Display screen
E	Variable for joystick read
X,Y,Z	Stand for joystick function
DE	Start of display list
ET	Falling object status
XYTX	Location of plane on screen

## 4 From Page 87

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10 REM CHARACTER SETS
20 REM 100-1100 (1100)
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# Just the stuff to speed your output

**ROLAND WADDILOVE assesses a 64k printer buffer designed to increase your system's efficiency**

**HAVE** you ever sat twiddling your thumbs while waiting for the printer to print a long document or listing? You! Well MicroBuffer is designed to avoid this tedious stopgap by providing a massive 64k printer buffer.

One of the problems of using a computer with a printer is the fact that they both run at different speeds. Computers like the Atari process information at quite a high speed, yet printers can only print the data provided by the micro relatively slowly. This forces the micro to reduce its speed to match that of the printer.

The effect of this is apparent when printing long documents or screen dumps — the micro is tied up for several minutes while the printer chatters away, preventing you from getting on with your work.

To make matters worse, the better the quality of print, the slower the printer runs and the longer the micro is tied up. This is why many printers, and even some software packages, have a draft and fast quality print mode.

If you want a rough idea of what the document looks like on paper you can draft mode for speed. When everything is to your liking you use fast quality — which may take up to twice as long to print, but the finished article is much more presentable.

A printer normally has a very small amount of ram on board, typically 1k or so, which it uses as a buffer. When there's some a signal is sent to the micro telling it to send some more text. The micro sends characters until the printer again signals the buffer is

full and waits for it to print more text.

When the buffer has space again the printer requests more text from the micro. It sends this so quickly the buffer fills in no time at all and consequently spends most of its time waiting for the printer to empty it. This time is wasted as the micro can't be used for anything else.

The larger the printer's buffer the more text the micro can dump in it before it becomes full. If it is very large, say 64k as in the MicroBuffer, the whole of the text will easily fit in.

The micro quickly dumps all the text in to the buffer and you can start on your next task straight away. The printer will print all the text in the buffer regardless of what the micro is doing (in fact you can even switch it off so

you can get on with the rest of your work).

So that is the idea behind the MicroBuffer — a large buffer is added between the computer and printer and the micro dumps all the output in it. The printer prints while the micro is free to process the next document, screen dump or report.

The unit is small, unobtrusive and can be tucked away in a corner of the desk. It comes complete with its own power supply.

The socket on the back of the cream coloured case is identical to the one on the printer and this is where you plug in your printer lead. A short cable runs to a plug which fits into the printer's socket.

All you do is plug in, switch on and it's ready to go — it couldn't be simpler. In fact you won't notice it's there — except for the time saved.

There are two on/off switches, and two buttons on the front of the unit. One is a repeat button which repeats the contents of the buffer, the other is a print button.

If you fill the buffer with text and suddenly discover an error you can hit the Clear button and flush it (you can) do this from the computer.

MicroBuffer isn't cheap, but if you find your time is being wasted waiting around for the printer it could improve your efficiency, no — if you rarely use your printer it isn't necessary, but if you regularly send large documents it could easily repay itself in time saved very quickly.

To this end, it isn't micro specific and will work with any computer and printer combination with Centronics type ports.

**Product:** MicroBuffer  
**Price:** £149.95  
**Supplier:** Sigma Computers plc  
One Software P.O. Box 111 Hemel Hempstead  
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Tel: 0423 277462









# Connecting up for those free games

I find reading for a computer magazine to keep me with my Atari computer when I come across Alan User and I am very pleased with it.

I think the game listings are brilliant - but I can get a little frustrating trying the game listings as it was then that I saw the advert for free games from MicroLink.

What do I need to get down and how do I go about it? - Steve Spink, West Ham-road, London.

Firstly you will need a modem and the correct cable to go to your computer or interface box.

You will also need communications software, and you will have to join MicroLink. You can do this by filling in the application form in Alan User.

An ideal piece of software is one to allow access to MicroLink's Mini Office II, as it is designed for ease of use - and the communications software allows very easy access to MicroLink.

You'll find an article on page 12 of this issue of Alan User explaining how to download software.

## Atari's new disc drives

AFTER seeing up for quite a while to buy an Atari 1050 disc drive I was very upset when I phoned Compuserve and they informed me that it was no longer available and

Atari are bringing out a new drive soon.

Could you please tell me if that is correct and how much this new drive will cost?

Also could you tell me if there is a cartridge-based language available that will allow re-programming, automatic recording, then some variable storage? - Andrew Reid, Doncaster, North Yorkshire.

Atari is bringing out a new disc drive - the XSD551 will replace the old 1050 drive. You may also be interested to know that as well as bringing out the new drive they also plan to bring out a new dot matrix printer - the XMD551.

The XSD555 disc drive is going to be double sized and have twice the storage capacity of the old 1050 drive as well as having a far superior loading time, in speed similar to the 1050 with a US Double ship installed.

It will retain full compatibility with present software and possibly well for around 1990.

Basic XE is a cartridge-based language that will allow you all the commands from Basic you require. It also allows you to obtain a

disc directory from Basic without going to Dos.

The cartridge is made by O S S (Optimised System Software) and can be bought from several of the advertisers in Alan User for approximately £75.

## Not one of ours...

RECENTLY a disgusting piece of software has been circulating around computer clubs in the Lancaster area. It carries the name Jiro Software of Lancaster, but the name is so no way to be linked with the actual company Jiro Software and we would like to disassociate ourselves completely from it.

We would also like to say that if the author(s) concerned can prove that they have a prior claim to the name Jiro Software then we will gladly consider changing our name - through, *Clydesdale Magpie Lane*.

## Suitable for TAB

COULD you please tell me if the Atari computer has the equivalent commands to BASIC and TAB on the BBC micro? - D. Rowlett, Rugeley, Nottingham.

Unfortunately Atari Basic does not have an INKEY command.

It is possible for you to make the computer look at the keyboard for an input by opening a channel using the command GET#14,4, where 4 is the reference to the key input.

Dos: this channel has

been opened you can then use the GET#14,4 to obtain a value for A. Remember to close the channel to the keyboard once you have finished with it.

Alan User does not have a TAB command but does have a PEEK/PEEK statement. This works in the same way as the BBC micro's TAB command. An example try using

10 PEEK#14,4:PRINT

The first number is the horizontal position, a cursor and the second is the vertical position on screen.

## Low priced games

I've been a dedicated Atari user for quite a long time now but now I am getting fed up of the companies selling games for £7.99 - most of them are rubbish.

Admittedly there are exceptions, but on the whole they appear to be taking off the market for good software.

I am unemployed but would rather save the money and buy a piece of software that I was going to get satisfaction from.

In my opinion the Atari is still one of the best value games around, and if the software houses don't stop selling these silly budget priced games then they are going to let the market for quality software.

On a similar point, could you please tell me if there are any plans to bring out World Class Leaderboard on the Atari as I am a great fan.

Back to Page 88

## No Elite on horizon

I HAVE been a proud owner of an Atari computer for four years now and I am very happy with the software. I recently got in touch with Philips to ask them when they are going to release the classic game Elite which is available on many other micro's. So why not the Atari?

Are software houses

afraid that an Atari version will be too superior to any other version? If this game was written for Atari it would break all records of software sales. - Trevor Harrison, HNSM Otter, also RPO Slags, London.

As far as we know there are no plans to release Elite for Atari computers.

4 From Page 48

of this game - A Mid P. Hall, North Hantsford

■ The budget games are designed to sell at a price that is affordable to most people and the quality can be very below the expensive software

However, software that sells for ten times the price is occasionally no better than the cheaper software

It is really unfair to state all software houses as dropping prices so that everyone can obtain games without breaking the bank. And it is very unlikely that the sale of budget games is going to run the market. World Class Londonboard is not available for the Atari computers at moment, and we know of no plans for it to be brought out

## Reviewing the oldies

I WAS very pleased to receive my issue which I sent in your birthday competition in Atari User. I just thought I would write to say thank you for the prize and for writing such a great magazine

My favourite part of the magazine is the reviews section and I was wondering if it would be possible for you to review some of the older games that have been put on the software market again as there are quite a lot about - Trinkle Morris, Ghast, Sonoran

## Saving to disc

I AM a novice on Atari computers and I have just bought myself a disc drive, but find that I am totally confused as to how to use it

I have typed in several programs listings from Atari User and try as I do to get Manager to open them to

## ATARI USER

## Mailbag

WE welcome letters from readers - about your experience using the Atari mouse, about what you would like to pass on to other users, and about what you would like to see in future issues

The address to write to is:

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Atari User  
Europe House  
88 Chester Road  
Hemel Hempstead  
Herts SG9 7JY

disc. Can you please explain how to do it? - P. Letts, Fossiden, Essex

■ Firstly, for you to use your Atari disc drive you will need a disc operating system (DOS). The price of software is the likelihood of your drive

Place your Dos disc into the drive and switch on your computer. The disc drive should start and eventually Ready should appear on screen

At this point type DOS, press Return and your disc operating system will be loaded. A menu will appear and at this point take out your Dos disc and place a blank disc in the drive

Select option 1 for format disc and follow the prompts. Once your disc has been formatted you will need to write Dos files to it. Do this by selecting option 11 and

following the prompts

Now switch the computer off and boot your disc up by powering on. When the Ready comes up this time type in the listing and when you're ready to save it to disc type

JOHN HILLMAN

The Magazine can be any name you want to call the program but mustn't be more than eight characters long. The set is an ascensor and is used to label the files that is a maximum length of three characters, but you do not need to use it

It is good convenient to use BAS for Basic files, TXT for word processor files and so on

To load a file once you have saved it you type LOADPS filename set

Try to remember the

filenames you choose but, if you forget, type Dos and select the directory option then return to Basic and proceed as before

## Helpful notes

I AM writing to tell you about a discovery I made while using Oxygen by Len Gidding from the July 1987 of Atari User

Once I had typed in the program and run it I found that, while having hours of fun playing tennis, if you press one of the keys and then press Help the note will be repeated until you either change the note or take your finger off Help - G. Bingham, Brentley, Kent

## Matter of opinion

I DISAGREE completely with the review you gave AtariUser in the July issue of Atari User. It is reviewing like this that make software houses - in the case of Atari - wonder why they even bother to write or convert software for the last few Ataris left on the shelf

It is not as good as the ST version, but I think it is one of the better pieces of software for the old Atari. And so thank most of my

# THOSE BOUNDER CHARACTERS

I OWN an Atari 800X and enjoy typing the listings from your magazine. In the June 1987 issue of Atari User you published a game called Bouncer

Is it possible to obtain the characters printed on June 22 on an 800X? I am having a lot of trouble finding them - A. Pawley, Peckham, London

■ The characters that

appear on line 22 in the listing for Bouncer are obtained on an 800X. You must use a combination of keys to obtain them

These key combinations read the use of the Control Inverse key and various other keys

Here is a list of the Atari codes for the characters you are looking for

In the first set of quotes

the Atari for the characters are as follows: 104, 102, 8, 103, 9, 100, 7, 101, 7, 106, 90 in the second set they are 104, 100, 94, 102, 100, 109, 7, 10, 7, 100 respectively

By looking up the Atari codes of these characters in one of the many tables available you'll be able to see the key combinations you need to obtain the characters

fellow Alans.

The graphics are adequate for such a game. Sound isn't really needed and the playability is out of this world.

I therefore urge other readers to follow my example and write to Intel, not just thank them for busy writing and converting some software for the Atari 8-bit series — which will rates as one of the best — **Rob Nijmegen, Zutphen, Holland**

■ Reviews are a matter of opinion and in this case the reviewer's disagreed with yours. Do any of our readers have any views they would like to express?

## Faulty recorder

I BOUGHT an Atari 800XL and tape recorder from Dixon and have had nothing but trouble with it. When the first one broke I had it back to the shop and they replaced it.

But when the replacement broke not long after and I took it back they would not replace it saying that they did not stock it any more.

When I checked a friend's desk I discovered that he is an Atari 1050 and mine is a Phoenix. Have Dixon made a mistake or is there a fault with Phoenix's models? — **R H Hollypak, Richmond, Surrey**

■ Dealers have not made a mistake in giving you a Phoenix. Regarded as quite a bit of the 8000L, package deals had this particular recorder in it.

Unfortunately, although they work they are not the best regarded to use with your Atari — the Atari 1050 is the better of the two.

Alan now makes a new tapedeck, the DC13, data recorder, which is of a very high standard and it can be bought from several of the advertisers in Atari User for around £80.

# RIGHT LOUD AND CLEAR

AFTER reading your Galt gets article in the July 1987 issue of Atari User about the speech synthesizer I decided to build it and to my delight it worked first time.

After this I began to consider possible applications for it. I decided that the Get it Right! program would be

ideal to experiment with as I made the needed model changes to the program, which are unfortunately too long to list in this letter.

I am now the proud owner of a talking Get it Right! computer. So would you please give my regards to Tim Golding for his wonderful gadget. I am sure it

will give me many more hours of fun — **Peter Wells, Ashbur, Cleveland**

■ We are always happy to hear from Atari users who have success with their projects and the day of a speaking Get it Right! is certainly very original. If you have any more ideas on this subject then let us know.



## Tasty fruits

I HAVE just finished typing in the exciting Fruits program from the March issue of Atari User. It took about five days to type in all those data statements but in the end it was worth it.

So to all you geeking Javales out there who have seen the listing but have been put off it because of the size, I recommend you to type it in because, as Alan User mentions, it will certainly satisfy your game long habit!

I give the program 8 out of 10 and congratulate David Rife.

How does the insert command on AtariArt affect the loading of a program file with the Dump 13 program published in the July edition of Atari User?

And will the insert command work with a cassette system, as I have produced a picture and would like to use the loader routine from the Dump 13 program — **A. Fleher, Westminster, Cardiff**

■ The insert option on AtariArt is an un-

documented feature of the program.

When a file is saved using the SAVE command it is saved in tabulated form with the colour register information but when the insert option is used the file is saved as a 62 sector file to drive 1 but with no colour information.

This option will not work with a cassette system as the program defaults to drive 1 automatically when the file is saved.

The loader routine from Dump 13 is also due to the fact that it has to calculate the pointer plots for each line.

It would therefore be preferable for you if you only want to load a single picture file.

## Data mistakes

I HAVE typed in the class number listing from the July 1985 issue of Atari User and found that when I ran it it came up with the message "Wait a moment" followed by an error — 6 at line 80.

When I checked the program line 80 was typed in correct according to your listing. I hope you can help me with my problem — **Marion Mithell, County Down, Northern Ireland**

■ Most problems with listings come from the same source — typing errors. Error 6 at line 80 indicates that you are attempting to read a

alphabetic character for a numeric value.

This means that somewhere in your data statements you have made an error and you will probably find that you have placed an alpha character in the data.

Remembering that error reports do not always report the actual line where the error is.

## Controller board fitting

At the June 1987 issue of Atari User there is an advertisement for the O.S. Controller board by Dave Greenhouse. The set of its functions seems another and some of the authors seem too good to be possible.

All in all it would appear that this is a cheat for all Atari computers. Could you please tell me if it fits inside a 1050L or does it plug in the back — **Craig Bastion, Haverhill, Cleveland**

■ The board sits on the motherboard of your computer and requires the removal of two chips. This task is a little fiddly but as long as you take care when you do it there should be no problem.

If you can't solder it in yourself then Computerhouse will fit it free. The board is software controlled and allows you to alter the parameters of the operating system. We hope to revamp it soon.

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– Anthony Ginn, writing about the Atari ST version in the May 1988 issue of the Atari User

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